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Editorial Notes

WE return once again to museums, in the two-fold belief that the subject will repay repeated attention, and that our readers for the most part share our view about its importance. We believe that the problem of the museums of this country must sooner or later receive organized attention, and we make no excuse therefore for thus returning to it. Moreover, museums in their present form must be a cause of increasing anxiety to those who are interested in the preservation of the raw materials of archaeology.

The accumulation of material has been hastened during recent years by the vast amount of scientific excavation which has been carried out. Added to the older collections, which consist very largely of chance finds made by individuals, it is leading rapidly to the congestion of our older and larger museums. And the problem is not simply one of bulk. The exhibition of material obtained in the age of scientific exploration, which we hope has now begun, calls for systems which were not formerly necessary. Plans, diagrams and photographs are all essential if a complicated site is to be properly understood : its stratigraphy and other features are at least as important as the specimens themselves. Without adequate means of museum display results will be wasted in one sense ; for adequate exhibition is scarcely less valuable than detailed excavation reports. The latter are usually only

read—if they are read at all, and not merely used as reference-books—by specialists ; but that much maligned person the ordinary man (upon whom, after all, these things ultimately depend) must be provided for by museum exhibits designed to encourage his interest in the doings of archaeology. Not, of course, that such exhibits will interest only the ' ordinary man ' : properly assembled they are of untold value to the expert archaeologist also.

In their present congested state our larger museums, with the British Museum at their head, are beginning to be unable to cope with the demands made on their space by these new methods. Their collections are rapidly outgrowing—indeed, judged by modern methods of display, they have already outgrown—buildings which in most cases were designed on rigid ' classical ' lines to conform with an outworn tradition, with no regard for subsequent expansion. Material has been poured into them until bursting-point has almost been reached. Their custodians struggle, in the face of congestion and unsatisfactory appliances, to display their collections according to methods which they recognize to be more in keeping with modern ideas and aims. But in present conditions such efforts, praiseworthy though they are in themselves, are doomed to ultimate disappointment. The disease is too deep-seated for temporary measures ; what is needed is nothing short of a major operation.

Two methods of tackling the problem present themselves : new buildings, and some kind of reorganization and redistribution of collections. The new buildings are bound to come. When they do, we hope that they will be designed expressly to fulfil their purpose as museums, and nothing else. To say this may seem unnecessary, but we are not sure that such a museum has yet been built anywhere in Europe upon a large scale. Architects still devote their ingenuity to expensive and wasteful effects, concentrating upon the setting to the detriment of what it is to contain. (Incidentally, we suspect that museum-curators themselves are not altogether without blame in this respect, for failing to insist upon due weight being given to their own requirements). Recent experience, however, has already made several points clear. In the new buildings the separate needs of education

and research must be clearly distinguished, by providing galleries for display and ' reserves ' for students. (It should not be necessary for the ordinary visitor to wade through masses of material which are quite irrelevant to his needs—in any case he will not do it). There should be facilities also for the examination of maps and photographs, cinematographs, as well as other amenities calculated to encourage the ordinary visitor and to sweeten the labours of the professional expert.

We hope in due course to publish an article on this question of museum buildings, but we do not believe that new buildings will entirely overcome the difficulties to which we have referred, at any rate in London. With them should be combined some scheme for splitting up the collections into a number of museums, suitably placed in different parts of London—this might be done in conjunction with slum-clearance schemes—which would bring into circulation the quantity of stagnant duplicate material which at present either serves to overwhelm the visitor to the galleries or is stored more or less inaccessibly in basements. Carried out with care such an arrangement need in no way incommode the research worker, while it would also dispel the fears of the war-minded archaeologist who sees the record of our past wiped out by a single bomb because all our eggs are in one basket.

The same principle could be extended in favour of the smaller museums elsewhere, although we do not propose at the moment to go into the various problems connected with these. We have not been able yet to see why specimens which serve no useful function in the central museums could not be transferred more or less permanently to the appropriate local museums, as long as they are efficiently maintained. This, of course, is quite a different thing from the loan of ordinary circulating material. It would presumably involve the repeal of the law relating to the British Museum collections, under which it is forbidden to dispose of even worthless material when once it has been registered. Such a step in itself would have a salutary effect, because it would establish the principle that these problems should be the care of trained experts, while it would also have an immediate bearing upon the problem of congestion.

Our frontispiece is a carved corbel-head found during recent excavations on the site of the Abbey of St. Edmund at Bury St. Edmund's, Essex. (We regret to learn that ' these have been conducted in a haphazard manner, with no form of qualified supervision '). It was found beside a passage with a tiled floor. The head is 8 inches from the chin to the top of the cap, is in perfect condition, and bears a trace of colour in the nostrils. Opinions differ with regard to the date. On the grounds that there are two very similar heads on the main porch of St. Mary's Church, built in the early 15th century and within the Abbey precincts, a 15th century date has been suggested. On the other hand some very high authorities prefer a date about 1300. Whatever the precise date, it is a fine example of medieval work, and as such we present it to our readers as a kind of Christmas card, to relieve the monotony of undiluted archaeology.

The completion of another volume of ANTIQUITY brings us once more to the time when we ask our subscribers for the renewal of their much appreciated support, and direct their attention to the notice printed below. We would also say that an early response is a very considerable help to us.

VOLUME X, FOR 1936

A renewal form for subscriptions for 1936 *is inserted in this number and we shall be very glad if our subscribers will return it with their cheques as promptly as they may find convenient. The forms are omitted from copies sent to subscribers who pay through banks or who have paid for* 1936 *in advance.*

The Newton Stone

by R. A. S. Macalister

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In a paddock in the garden of Newton House, a few miles from Aberdeen, there stands a pillar-stone, bearing on one of its edges, and on an incised supplementary line, an inscription in a long and a short row of Ogham characters ; and on an adjacent face a second inscription, in six lines of apparently alphabetic characters (PLATE I).

Decipherer after decipherer has visited it ; published an interpretation of it ; and then they, like the Baker, ' softly and suddenly vanish away ', as though scared by their own temerity, leaving the arena vacant for the next-comer. No one has troubled to dispute any of these readings : no one, not even any of the authors themselves, has ventured to defend them. There has never been a ' Newton Stone ' controversy ; the literature of the subject, like that of the ' Number of the Beast ', resembles a series of disconnected runaway knocks, inflicted by street urchins on the door of a tempting corner house. The redoubtable General Vallancey began the game, by discovering that the inscription commemorated ' Gylf Gummara '. After him, we have been permitted momentary glimpses of a Phoenician magistrate, with the improbable name Han-Thanit-Zenaniah, who, for some reason, was ' saturated with sorrow ' ; of another Phoenician, Atalthan son of Pazach, commemorated by his lamenting mother ; of an imposing personage who called himself ' the all-powerful O Aremin ', but who unexpectedly thought it worth his while to record that he had put a ' gomodrach ' on the field—' gomodrach ', we are told, being ' Celtic ' for nothing more exciting than ' a flock of sheep ' ! Next comes one Aittie, apparently a Buddhist missionary, who was ' the light of the darkness of a perverted people ', until he was unfortunately ' smitten when Baal ruled Jutland ' ; and following him comes a mysterious potentate described as ' the princely ruler of the Border of the Cumbrians ', whose ' home-living niece-daughter ' (whatever that means) erected the stone to his memory, with its inscription in a language obscurely specified as ' Yore-Welsh '. One decipherer reads into the inscription a command to ' draw nigh to the soul of Moluag ', though he does not tell us how we are to set about doing so ; while

from others we learn of a polysyllabic Celt called Diglovoceus son of Siloqounnos ; of a monosyllabic Saxon called Grig ; and of a number of other phantasms, no less fantastic, whose peaceful slumbers in Limbo we need not disturb.

In a word, the inscription has been before the public for over a century, and every one of the attempts at deciphering it has been philologically impossible—one of them actually gave ' Unggi ' as the genitive of the Gaelic name Angus !—and psychologically ludicrous.

And yet, so far as legibility is concerned, the inscription is only just short of what numismatists call ' mint state '. Moreover, the number of scripts and languages to which it could reasonably be assigned is small, and with one exception these are all more or less familiar to scholars. That one exception is Pictish ; but if this inscription be a specimen of the unknown Pictish language and writing, why is there not a single example of the same alphabet anywhere else in Pictland, among the host of elaborately sculptured monuments that we find there ? If the Picts had such a highly developed alphabet, why did they cumber themselves with the unadaptable Ogham ? If the script is Pictish, these questions are unanswerable ; the obvious inference must be that, whatever it is, it is *not* Pictish.

Of other possibilities there appear to be four, and (in descending order of probability) these are :

(1) Latin, or a Celtic language, in Roman or minuscular script.
(2) A Teutonic language, in Runic script.
(3) Greek, in Greek script.
(4) Some Oriental language, in its proper script.

To all of these the same criticism applies. These languages are known to scholars ; and even if the eccentric forms of the letters had put minor difficulties in the way of interpretation, some competent decipherer should have come forward long before this, with authority to tell us, at least in general terms, what the inscription is about. A Palmyrene inscription was found in South Shields many years ago ; and it was translated immediately, and as accurately and easily as if it had been found in Palmyra. Contrast the two Phoenician translations of the Newton stone ! I know nothing of the competence of their respective authors to deal with a genuine Phoenician inscription ; but in their efforts at interpreting the Newton inscription, they agreed in their transliteration of only 13 of its 45 letters, and their translations had not a single idea in common. Nor had either of them the slightest resemblance to the ordinary formulae of Phoenician inscriptions.

When we attempt to reconstruct the history of the stone, we have at our disposal the following evidence :—

(1) A letter written by the (fourth) Earl of Aberdeen, dated 10 September 1855, to Stuart, the editor for the Spalding Club of *The Sculptured Stones of Scotland*; and published in that work (vol. I, p. 2).

(2) A note in *The Gentleman's Magazine*, October 1807, p. 913, signed 'R'; accompanied by a facsimile (for its time of remarkable excellence) of the alphabetic inscription.

(3) A short note in the 'Advertisement' prefixed to Pinkerton's *Inquiry into the History of Scotland* (ed. of 1814, p. xiii).

We gather that the stone stood on an open moorland, and attracted no special attention, till about 1750. About half a mile to the west there was another stone, bearing conspicuous 'Pictish' symbols; this was moved to Newton House about 1770 ('upwards of sixty years ago', writes Stuart in 1836). We might have expected a neighbouring stone with such a remarkable inscription to have been appropriated along with it; but it was still on its original site when Stuart first saw it in 1835, so that it cannot have been moved before 1836 at the earliest. The two stones now stand side by side, in the paddock at Newton House.

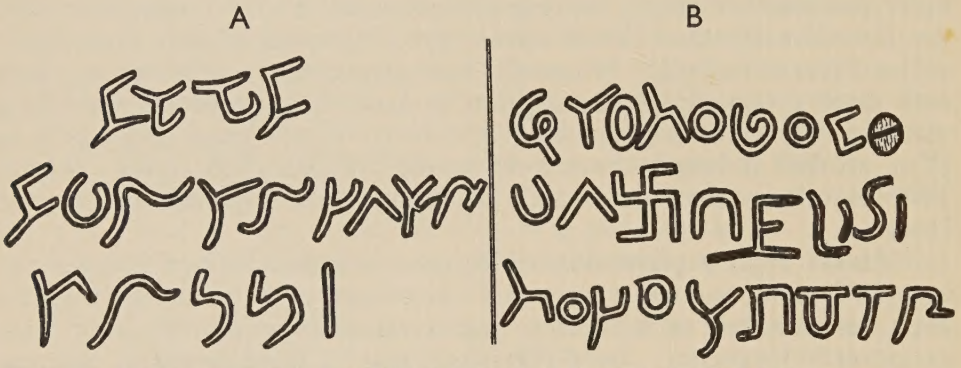
About 1750 a plantation of fir-trees was established around the inscribed stone, and these grew and hid it from view. So little importance was attached to it locally, that it seems thereafter to have been temporarily forgotten : Lord Aberdeen says 'I think it was in the year 1804 that I first saw the Newton stone, the inscription on which I believe had been discovered by some shepherd boys in the preceding year. The stone, at that time, was situated in a fir plantation, a few paces distant from the high road'. This high road (from Aberdeen to Huntly) had been constructed very shortly before, making the site of the stone more accessible, and, probably, reducing the extent of the plantation. 'R', in *The Gentleman's Magazine*, tells us that (in 1807) the stone was 'in a field'—not a plantation. Pinkerton, in 1814, speaks of it as being 'in a small thicket', and describes the discovery of the inscription as 'recent'. In weighing this evidence, we must remember that 'R' is contemporary, and Pinkerton nearly so; whereas Lord Aberdeen writes from memory after half a century.

The long line of Ogham writing is ancient : but I have not the slightest doubt that the shorter line, as well as the six lines of alphabetic signs and wonders on the face of the stone, are recent, and that they were executed while it was under cover of the plantation. They

belong to the time when owners of estates built mock ruins and 'follies'; and I take them to belong to this class. The perpetrator must have been of the type of a certain Edward Hudson, who owned a property at Rathfarnham, near Dublin; where he amused himself by constructing sham dolmens, among which he erected a pillar-stone inscribed, in Oghams, with the following appropriate tag adapted from Horace (Epist. I, XIV, 39):—

Rident uicini glebas et saxa mouentem
Eduardum Hudson.

At the first glance we see that the technique of the two inscriptions is essentially different. The Ogham scores are pocked, the commonest



THE ALPHABETIC INSCRIPTION DIVIDED INTO ITS COMPONENT PARTS

way of fashioning ancient inscriptions in these countries; the alphabetic letters are cut in grooves, with a V-shaped section, by means of a mason's chisel. The stone-cutter was expert at his task: this is important to notice, for we cannot take refuge in the assumption that the inscription is unintelligible because the letters were distorted by an ignorant blunderer. In any case, it is impossible to believe that the man who instructed a mason to cut so elaborate an inscription would have rested satisfied with the result, if neither he, nor those whom he desired to address, could have read it! He would surely have ordered its destruction, and commissioned some more competent artificer to carry out the job.

A fact of primary importance has been overlooked by decipherers[1]: namely that the inscription in alphabetic characters is really two

[1] Rhys hints at it, *Proceedings Soc. Antiq. Scot.* 1897–8, p. 363.

PLATE I

THE ALPHABETIC INSCRIPTION ON THE NEWTON STONE

facing p. 392

PLATE II

THE NEWTON STONE: FRONT VIEW

PLATE III

THE NEWTON STONE: SIDE VIEW

inscriptions (call them A and B) which, though intermingled, are clearly contrasted. A consists of lines 1, 2, 5; B of lines 3, 4, 6.[2] [See the diagram page 392, where the two inscriptions are separated, and check this description by reference to PLATE I]. The latter three are well aligned, in a square block of writing, with letters closely compacted together, and containing numerous Greek-looking characters, though the inscription is obviously not Greek. The former are straggling, with sprawling characters, and there is no attempt at aligning them with the B group or among themselves. The A group contains no Greek-like letters except Y, which hardly counts, as this may belong to any one of several alphabets.

Since about 1892 it has been generally agreed that the first two lines of the alphabetic inscription correspond to the beginning of the Ogham; but I do not think that it has been noticed that the transliteration is continued in line 5 (line 3 of inscription A). Inscription A is thus a transliteration of the Ogham. But the transliteration is so faulty that it could not have been made by anyone who had the least understanding of what the Ogham meant; and therefore it could not be one half of a contemporary bilingual. It is just what would be produced by an amateur, with no knowledge beyond what he could gather from the Ogham alphabet, as published in 1781 in Vallancey's *Grammar of the Iberno-Celtic Language*. The letters in which the transliteration is expressed are recognizable with the help of the Ogham original, except for a few ambiguities. They are not like any ancient forms of Roman letters; but they bear a family resemblance to some of the queer perversions of inscriptions to be found in, let us say, early editions of Camden, or in Rowlands' *Mona Antiqua Restaurata*.

I am not at present concerned with the interpretation of the Ogham, beyond a few details which it is here necessary to mention. It is to be read IDDARRNNN VORRENN IPUOR in the first line: I leave the second line alone for the moment. I shall content myself here with saying that I take the first word to be the same as EDDARNONN, which we find (with some variety of spelling) on three other stones, and which I would interpret conjecturally as meaning 'his stone', 'his grave', or the like: VORRENN I regard as a personal name, VORR, with a postfix having a genitive sense; and IPUOR is a noun, meaning some kind of

[2] While giving this paper its final revision, and after I had drawn the diagram (FIG. 2), I noticed (as explained below) that the third line of inscription B properly belongs to inscription A. It seems to be an afterthought, which will to some extent account for its conformity in outward appearance to inscription B.

relationship—' son ', ' nephew ', or the like—with a dative postfix. To a justification of these interpretations I shall return on another occasion ; it would require a complete marshalling of all the epigraphic material surviving in Pictland.

When I drafted this paper, I supposed that the compiler of the inscription, puzzled by the three Ogham letters following the X (*i.e.* the P in IPUOR), had omitted them. These letters are very carelessly set out, without due regard to the differentiation between vowels and consonants : it is probable that they could not be accurately read even now, if we had not other inscriptions for comparison. But at the last moment I realized that the transliteration is continued on what I had already drawn out as the third line of inscription B. The λ-shaped character represents the very straggling ' P ' of the Ogham, and the *ορο* following (as we may represent them for typographical convenience) is the transliterator's effort at the UOR.[3] The whole of his transliteration is thus

Line 1, EDDE (or ETTE)
,, 2, ECNUNFAUR
,, 5, RANNI
,, 6, λORO

Remembering that Vallancey, like all other Oghamists of pre-philological days, rendered the Ogham V by F ; that the carver of the Ogham has been beyond measure careless in the setting of his scores on the stem-line ; and that the transliterator could not possibly have had the faintest notion of the meaning of the text ; we must admit that he comes not uncreditably out of his struggle with a peculiarly difficult inscription. Thus, the first two Ogham R's are cut in such a way that there is some excuse for the transliterator having read them as E, C. On the other hand he should not have counted only four scores in each of these letters, where there are really five ; but similar mistakes have been made by Oghamists much more highly experienced than he was. Incidentally, this is the first attempt ever made in modern times at deciphering an ancient Ogham inscription : some wild renderings of the inscription on Mount Callan, co. Clare, published in 1785, do not count, as we now know that this inscription is another modern ' folly '.

But when all is said and done, we must repeat, that there are too

[3] These four letters have the appearance of having been squeezed in where we find them after the rest of the inscription (including the five letters which follow them) had been cut. Apparently the author of the alphabetic inscription returned to this difficult part of the text after the rest of his work was finished.

many blunders in the transliteration in inscription A to allow us to accept it as a contemporary echo of the Ogham. This being, I hope, established, we now turn to the much more difficult problem of explaining inscription B.

The Gentleman's Magazine, the medium through which the ' Edward Hudsons ' of the time were kept in touch with the progress of discovery and invention, announced, in its supplement for 1801, p. 1194, the discovery of the Rosetta stone, in the following words :—

> General Dugun, lately returned from the Egyptian expedition, brought home two copies of a remarkable inscription found on a piece of black and extremely fine-grained granite. The inscription is three-fold : one portion presents a succession of hieroglyphicks in several very regular lines ; another portion, which has not yet been sufficiently examined, presents a greater number of lines, in characters which yet leave some uncertainty, and which require a very attentive examination ; the remaining portion consists of 53 lines in Greek.

Particulars are then given as to the steps being taken for its decipherment.

In August 1802, p. 725, the same journal published a letter signed ' D.H. ', describing how the stone, ' dug up by the French ' had been, ' with other antique fragments, made by capitulation the property of the British nation '. But, the writer goes on to complain, ' copies had been previously taken of it by its former possessors, who, with their accustomed vivacity, have anticipated us in the attempt to illustrate (*sic*, read ' elucidate ' ?) it '. He then gives details of the preliminary efforts at decipherment by Silvester de Sacy, adding : ' That the three inscriptions commemorate the same thing is clear from the words at the close of the Greek, ordering it to be engraven on hard stone in *sacred*, *native*, and *Greek* letters '. This sentence I take to be the inspiration of the local ' Edward Hudson '.[4] He had observed the Oghams on the edge ; had deciphered them to the best of his ability, presumably with the aid of Vallancey's publication ; and then, fired with the desire to possess a ' Rosetta stone ' of his own, he added to the inscription, which he regarded as being in sacred (druidic) characters, a ' translation ', in ' native ' and in ' Greek ' letters—respectively the inscriptions here called A and B.

The Gentleman's Magazine continued to interest its readers on the subject of the Rosetta stone. In December 1802, p. 1106, it published a translation of the Greek inscription. On p. 1127 of the same issue, in a review of Wilson's *History of the British Expedition to Egypt*, the

[4] For convenience of reference I designate the unknown person responsible for the Newton inscription by the name of his Rathfarnham counterpart—thereby avoiding the harsh word ' forger '. The transaction was a ' folly ' rather than a fraud.

monument is mentioned as ' a stone of black granite with three inscriptions, hieroglyphic, Coptic, and Greek '. ' D.H.' had already mentioned the difficulty which Silvester de Sacy was finding in his work of interpretation, owing to his imperfect knowledge *of Coptic*. These two references might suggest that ' Hudson ', to make his inscription conform more closely to the Rosetta model, had picked out a stray sentence of Coptic from some book and had made an amateurish reproduction of it. This occurred to me as a possible explanation of the Greekish-looking letters in a non-Greek inscription. But Mr W. E. Crum, who most kindly allowed me to consult him, told me that he could see nothing in it suggestive of Coptic.

We must therefore conclude that inscription **B** is mere childish galimathias, a meaningless mixture of Greek and arbitrary characters.

Let us now enquire how this accords with the evidence. Lord Aberdeen, writing from memory in 1855, *thinks* that he first saw the stone in 1804, and that shepherd boys had discovered it in the preceding year. These dates are probably correct. His lordship returned from his travels in Greece in 1803, so that his visit could not have been earlier. He had reason to remember the year 1804, as it was the year of his graduation (Dict. Nat. Biog.). He goes on to say that the stone was then covered with hard grey lichen, which made the letters ' scarcely distinguishable ' : though he adds that, at the date of his letter in 1855, ' in consequence of the frequent tracings and rubbings off to which the letters have been submitted, they have now entirely lost their natural surface '. But rubbing, however frequent, would not disturb hard lichen ; and it cannot be said that the surface of the stone shows signs of injury from this or any other cause. Lord Aberdeen was a traveller and a classical scholar ; he had first-hand experience in, at least, *looking at* ancient inscriptions ; and yet he passed over as ' scarcely distinguishable ' an inscription of which, three years later, an anonymous writer could publish a most accurate and complete facsimile. Here is a fact that surely calls for explanation ; and I submit that a satisfactory explanation will be found in the following reconstruction of the course of events.

(1) The shepherd boys discovered the *stone* (not the *inscription*) about 1803. They noticed certain superficial marks in the lichen which they took for writing. (They were probably illiterate.)

(2) The story of a written stone got about, and Lord Aberdeen visited it in 1804. He came predisposed to find an inscription, and saw some ' scarcely distinguishable ' marks, of which he could make

nothing. Anyone who has tried to read a worn inscription in the obscure light of a thicket of trees will be ready to make every allowance for him. Writing long afterwards, when the inscription had become familiar, and with no suspicion as to its genuineness, he felt sure that it must have been there all the time, but that the circumstances prevented him from seeing it properly: his later knowledge (a too frequent experience of all of us) having coloured the actuality of his recollections. But, I submit, *the inscription was not there at all*, when Lord Aberdeen saw the stone in 1804.

(3) The unknown 'Hudson' also visited the stone, about the same time; and he first noticed, and essayed to decipher, the Ogham.

(4) *The Gentleman's Magazine* had published an account of the Rosetta stone in 1802. 'Hudson' was thereby inspired to perpetrate his 'folly', which he must have done very shortly after Lord Aberdeen's visit. The rumour that the stone was already inscribed may have encouraged him to improve thus upon the vague handiwork of Nature.

(5) 'R' published the forged inscription in *The Gentleman's Magazine* in 1807. The remarkable accuracy of 'R's' copy suggests a suspicion that 'R' and 'Hudson' might have been the same person; but against this is the fact that 'R' makes no mention of the Ogham, of which 'Hudson' must necessarily have been aware. Exactly what 'Hudson' gained or expected to gain by the transaction does not fully appear. He may have died soon after the inscription was cut, thereby losing whatever profit or kudos he had anticipated; other discoverers (including 'R') may have 'butted in' before he had judged the time ripe to spring the discovery on the world; or perhaps he may have merely intended to 'lie low' from the first, and to enjoy the private fun of watching the disputes of men of learning over his handiwork.

The second line of Ogham writing reads IOSIR. This is not what it should have been: we want the personal name of the owner of the monument, with the Pictish dative postfix *or* or *vor*. And such a name was there originally. The termination *-or* can be faintly traced, just above the final R of IOSIR. It can be detected in the left-hand photograph of Romilly Allen's *Early Christian Monuments of Scotland*, III, 197 (fig. 214); and relics of it are very clear on the excellent cast of the stone in Edinburgh Museum. Owing to adverse conditions of lighting, on the day when I visited the stone itself, I failed to observe them on the original monument.

Now General Vallancey had just published in *Collectanea de Rebus hibernicis* (V, 90), a bronze-age gold ring with expanding cup-like

terminals—one of the commonest of Irish gold ornaments—upon which someone had scratched certain marks. The ring, which I have had an opportunity of examining, is genuine ; but the marks are not much older than Vallancey's own time, and may conceivably have been made for a practical joke upon that great man himself. On the one expansion is the word UOSER in Ogham letters : on the other are four meaningless characters, which Vallancey had no difficulty in recognizing—and reading—as ' Phoenician or Estrangelo '. With these inscriptions as his text, he indulges in a page or two of characteristic philological delirium, in which Aesar, Dusares, the Arabic Al-Zuhari, and, of course, Osiris, are all mixed up together in a sort of mythological Irish stew.[5]

To our ' Hudson ' who (on the theory here propounded) had Egypt in his mind, ' Osiris ' would come as a flash of inspiration : and he seems to have instructed his mason to batter out the original second line of the Ogham—the pock-marks remain still, as a record of the crime—and to substitute an invocation of that deity.

The two lines of Ogham writing look very different. The second is weakly cut, amateurish and straggling. A stem-line is provided, though as the photographs will show, a ridge was there already, like the ridge on which the longer line is written ; the latter shows no trace of a stem-line. I find it impossible to believe that the two Ogham lines could have been the work of the same hand.

The last five letters of the alphabetic inscription appear to be the transliteration of this addition to the Ogham ; and as has already been remarked, they seem to have been cut before the four letters which precede them. Vallancey's ring reads UOSER, the Ogham IOSIR. ' Hudson ' or his stonemason collaborator was careless about Ogham vowels, but in his transliteration he approximates to the Vallancey form : the letters look like the word disguised as YΩσIR. The photographs would suggest that the penultimate letter is E (as it ought to be) : but the wavy appearance of the upright stroke is due to some slight flaws in the surface of the stone.

So much, then, for the inscription with which the Newton stone has been wasting time, energy, ingenuity, and journey-money for over a century. May it now follow the ragged regiment of spectres to which it has given birth, into the oubliettes of Tartarus : and may we hear no more of it !

[5] An easily accessible copy of Vallancey's cut of this object will be found in Brash's book on Ogham inscriptions, plate XLI.

Blood-groups and Race*

by J. Millot

Professor at the Sorbonne, Paris

IT has been known for a long time that there might exist differences in the blood of animals of different species : morphological differences connected with the shape and size of the red corpuscles, or chemical differences relating to variations in the respiratory pigment, called haemoglobin. It was also known that individual differences, acquired during life, might appear in the blood : as a result of illness, for instance, certain properties of the blood might be permanently modified by the formation and accumulation of antibodies. At the beginning of this century it was discovered that beside these variations of a zoological or accidental nature, human blood possesses hereditary constitutional differences of an individual and racial importance. The study of these, and especially of their anthropological application, has advanced considerably ; at the present moment it almost forms an independent branch of science. The investigations bearing on it are to be counted by thousands, and several scientific periodicals are now exclusively devoted to it.

What are these blood-differences and how were they discovered ? Their history is closely associated with blood-transfusion.

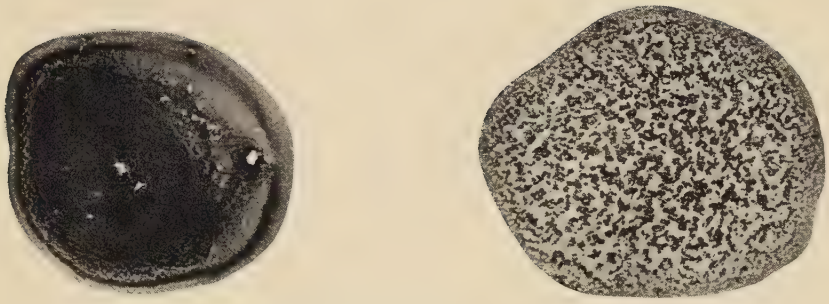
Blood is known to consist of a large number of small corpuscles in suspension in a liquid, the plasma. The corpuscles are of two sorts, white (called leucocytes) and red (called erythrocytes) which are much more numerous. Two constituents may also be distinguished in the plasma : a liquid (serum) consisting essentially of a 7 per cent. solution of salt water, and of albuminoid substances in solution, most of which are precipitated if the blood flows out from the organism, producing the well-known phenomenon of coagulation. Under normal conditions the red corpuscles float freely in the plasma, without adhering to each

* Translated by the Editor, who wishes to thank Professor Ruggles Gates for reading the article and correcting some technical errors of translation.

other ; but under certain conditions adherence occurs and the erythrocytes collect together in bunches, producing the phenomenon of agglutination. This result can happen both *in vitro*, that is to say, in blood that is kept in glass vessels, and *in vivo*, in a living organism ; but their circulation is seriously impeded and very grave accidents may be produced.

The idea of blood-transfusion, of injecting foreign blood into a subject weakened by excessive bleeding, is not a new one ; we know of undoubted instances occurring as early as the 15th century : that of Pope Innocent VIII, for example. The results of these early transfusions, made mostly with the blood of heifers or lambs, were so disastrous that in the 17th century the operation was made illegal by an act of parliament passed in Paris. The cause of these failures was partly discovered in 1874, when Landois showed that the serum of an animal of one species agglutinates the red corpuscles of animals of other species ; that is to say, that if one mixes the blood of two animals of different species, there ensues a general clumping of their corpuscles : that has been called hetero-agglutination. At that date it was thought that agglutination only took place between the bloods of different species. Accordingly transfusions were then made again but only with human blood ; the results were good in certain cases but still disastrous in others. That was the state of affairs when, about 1900, several doctors observed fortuitously that the serum of certain sick people agglutinated the red corpuscles of healthy patients. This phenomenon, which was called iso-agglutination, was at first regarded as indicating a pathological condition ; but researches were continued and Landsteiner proved that, when the blood of two perfectly healthy people was mixed, agglutination was produced or not according to the patients who were the subject of the experiment. He concluded from his experiments, on the one hand that iso-agglutination can exist in a normal human being, on the other hand that the iso-agglutinating properties are not the same in all human beings, and that these should, from this point of view, be divided into several categories or groups. That is the double discovery of fundamental importance for which Landsteiner was awarded the Nobel prize—a discovery whose origin is to be found in the great volume of research devoted for a quarter of a century to the serological properties of the blood.

How should the facts brought to light by Landsteiner be interpreted ? The simplest explanation, and the one most usually given at the present moment, is that iso-agglutination results from the reciprocal



TWO DROPS OF BLOOD, THE ONE ON THE LEFT NORMAL, THAT ON THE RIGHT AGGLUTINATED

facing p. 401

action of two kinds of substances whose chemical nature, however, remains completely unknown : the one called agglutinogen is contained in the red corpuscles, the other, or agglutinin is in the serum. Analysis has shown that there are at least two different agglutinogens, conventionally called A and B[1] and capable of being present in the red corpuscles either singly (A or B) or together (AB), or not at all (O) : certain individuals therefore have only A, and others have B, and others both agglutinogens ; while yet others are totally devoid of either. It is this which is described somewhat inaccurately (but which has found its way into scientific parlance) as the existence in the human species of four blood-groups—group A, group B, group AB, and group O, this last containing neither A nor B.

To the agglutinogens of the corpuscles correspond agglutinins in the serum which are distinguished by the Greek letters α (or anti–A) and β (or anti–B). The same blood never possesses agglutinins active in the presence of their opposites ; or in other words, the serum of a given individual never agglutinates its own corpuscles—a result which in fact would make circulation, and consequently life, impossible. Accordingly the serum of bloods belonging to group A contains, not agglutinin α which agglutinates A, but agglutinin β ; and it is the serum of group B which contains agglutinin α. The group AB, possessor of two agglutinogens, can never have agglutinins, whilst group O possesses at the same time both α and β. From this it follows that the complete formulas of the blood-groups are Aβ, Bα, AB O, O$\alpha\beta$. This nomenclature is the one usually adopted, but two others, those of Jansky and Moss, are also in use.[2]

If one brings together the blood of two people belonging to the same group there is no result—the blood mixes normally. If on the other hand one brings together blood samples from groups A and B, α will react with A, β with B, and agglutination will ensue.[3]

In the light of these facts we now know how to practise transfusion without risk of accident ; it is enough to establish to which group the

[1] In this deliberately simplified description, we are not taking into account either agglutinogens or accessory agglutinins.

[2] The groups are indicated by Roman figures ; according to Jansky O=I, A=II, B=III, AB=IV ; according to Moss AB=I, A=II, B=III, O=IV.

[3] The hypothesis of agglutinins and agglutinogens is a convenient explanation of the facts ; but does it correspond with reality ? Are there definite chemical bodies involved ? No doubt we have to reckon only with special properties which may be common to many different substances, under certain well-defined physical conditions (Mendes—Correa).

patient belongs, and to obtain the blood from a donor belonging to the same group as himself. Nothing is easier, for in the big towns there have come into existence specialized institutes whence, by telephoning, one can immediately obtain a ' donor ' of the required type. In actual fact, the agglutinins are only active when concentrated, and those of the donor, diluted in the blood of the receiver, appear practically without effect : it results that one can always transfuse blood of group O (universal donor) into a wounded patient, whatever his group, without serious results ; and that, conversely, a subject of group AB can receive without harm any blood whatever (universal receiver).

Human beings, therefore, are divided into four groups, according to the serological properties of their blood. These preliminary explanations having been given, let us see what main characteristics are revealed by the reactions of agglutination ; after which we will consider the applications of the results to different subjects, particularly those of an anthropological nature.

It is a fundamental fact that blood-properties have a remarkable permanence. Their stability may even be regarded as absolute ; a man never changes his group under any circumstances whatever. We already have observations covering 25 years, and we know that age never modifies the reactions, nor does any physiological condition. Illness has no effect, nor have treatments of the most varied kind, in spite of what may have been said to the contrary. X-rays, like those of radium, as repeated anaesthesia, produce no effect. Lastly, the group is not changed even after a transfusion from the blood of another group ; and the case is actually recorded of a subject of group AB (universal receiver) having undergone 75 transfusions with blood from each of the four groups without suffering any modification of his own blood.

A second characteristic of blood-properties is the precocious manner in which they are differentiated. The agglutinogens appear before the agglutinins. They are sometimes discoverable in the second month of embryonic life. One can in any case always detect them during the last weeks preceding birth, and so plainly that it is always possible, normally, to know to what group a new-born child belongs.

If blood-properties are fixed and precocious, they do not manifest the same degree of strength in all subjects. Agglutinins, like agglutinogens, differ in strength according to individuals, race and age. It has been recorded, for example, that the power of agglutinins, always very weak at birth, increased up to thirty years of age, to decrease after forty ; and that it was greater amongst Malays than amongst Europeans.

The fact of belonging to a given group is a hereditary characteristic. It would be impossible here to give even a rapid outline of the mechanism of heredity. What is essential is to know that in a child no agglutinogen can appear which is not present in the blood of one or other of its parents. If the father and mother belong to group A, all the children may belong to group A ; if they belong to group O, all the children will belong to group O ; if the parents do not belong to the same group—if, for example, one is A and the other B—the children will differ and be A, B, AB or O.[4] Recognition of these facts has resulted in curious applications of them. It has made it possible, for instance, to restore to their respective mothers newly-born infants which had been mixed up immediately after birth. Above all it has been used in medico-legal practice to investigate paternity.

Attempts have been made to establish a connexion between blood-properties and other morphological or physiological characters of the organism, such as stature, skull-form, pigmentation, hair, age of onset of puberty, etc. All these attempts appear to have failed, the different correlations announced having all been more or less falsified by the results, in the light of more extended observations. Thus, it had been stated that in Sweden the majority of group B subjects were brachy-cephalic ; but this has not been generally established, and it may be regarded as a mere coincidence. Some doctors believed they could detect a relationship between the serological properties of blood and the liability to certain maladies, such as infectious fevers, cancer, etc. Victims of tuberculosis, for instance, belonged most frequently to group A, whilst members of group B suffered from a noticeable weakness of the nervous system, and amongst them psychoses were more often observed and criminals most common. But existing observations are not nearly numerous enough to justify such conclusions.

Lastly there is the important belief that the reactions of iso-agglutination are not peculiar to the human species. They have been found in several other mammals. In most they appear to be much weaker and less constant than in man, and to result from different agglutinogens ; on the other hand, human agglutinogens and agglut-inins are also found in the anthropoid apes, Gorillas, Chimpanzees, Orang-utangs and Gibbons. It follows that one could transfuse the

[4] It may be added that according to Bernstein (1925) and Snyder (1925) blood-groups inherit as three multiple allelomorphs corresponding to the agglutinogens, A and B being dominant in association with a similar recessive R, and not as two independent pairs of factors, as was formerly thought.

blood of a chimpanzee into a man of the same group without ill effect, whilst transfusion of human group B blood would have serious consequences.

These few general observations are enough to demonstrate the great interest, from many points of view, of agglutinative phenomena and the researches which they have inspired. We shall next see that a knowledge of this subject is of the greatest importance for anthropologists, and that the fact of belonging to a given group—a fact, as we have seen, independent of age, sex and every other physiological condition—seems, on the other hand, to be a very definite function of race.

It had been noticed ever since the first investigations, that the proportions of the different groups maintained a remarkable constancy in a given population, amongst the Germans or the Italians, for instance. But the suggestion (due to MM. L. and H. Hirszfeld) that there might be a relation between the anthropological content and the distribution of agglutinogens was not put forward until later. Being attached during the war to the medical service of the Army of the East, these biologists had opportunities of examining the serological properties of the blood of a large number of soldiers or civilians belonging to very different races. They established three categories : one marked by a high percentage of subjects of group A and a low percentage of B, and including the majority of European races (European type) : a second showing on the contrary a high percentage of B and a low one of A, comprising Mongoloids and Ethiopians (Asio-African type) : and a last category containing approximately equal quantities of A and B, comprising Russians, Turks, Arabs and Jews (intermediate type). This discovery, published in 1919, gave rise to a considerable number of investigations, producing an enormous mass of documents of varying merit, and emphasized the great ethnological interest of blood-groups. It would need many pages to give a complete account of the results, and we must therefore confine ourselves here to describing a few of the essential features.

Hirszfeld thought he could conveniently synthesize these features by calculating for each race a ' biochemical index ', obtained by dividing the percentage of A by the percentage of B, that is to say, by establishing the proportionate fraction $\frac{A+AB}{B+AB}$. If out of 100 subjects of a race one found 40 A, 10 B and 5 AB, the index would be $\frac{40+5}{10+5}=\frac{45}{15}=3$. The biochemical index for the European type thus fell between 2.5 and 4.5,

the index of the Asio-African type between 0.5 and 1.1, and the index of the intermediate type between 1.3 and 1.8

This index has been much used. But the most recent researches have shown, on the one hand that the sero-ethnic types established by Hirszfeld were not exact enough, on the other that the biochemical index was open to serious criticism ; in actual fact, all races in which the proportion of A is equal to that of B, whatever might be their absolute value, would have a similar index, equal to 1, whatever the number of the O's or of the AB's, which is obviously unsatisfactory.

Many other formulae have been proposed to replace that of Hirszfeld, but without offering any clear advantages over it. On the other hand successful use has been made of tables, which have proved most instructive.

The examination of such tables enables us, following Ottenberg, to distinguish a certain number of quite well marked sero-ethnic types. One such is remarkable for its extreme poverty in both A and B, that is to say it includes almost exclusively only the subjects of Group O. It comprises the American Indians, the Filipinos, and most of the Eskimos of pure race ; it is called the Americo-Pacific type.

A second type, adjacent, rather deficient in B, but richer in A, is represented by the Australians (Australian type). A third, again poor in B, but very rich in A, includes all western European type. A fourth type is marked by a moderate proportion of A and B, and includes the Negroes, Melanesians, southern Asiatics (Annamites, Javanese) and is called the Afro-Malay or Afro-south-Asiatic type. A fifth, embracing the Near Easterns (Turks, Persians, Armenians, Arabs) as well as Russians and Czechs, has a moderate proportion of B and a high percentage of A (intermediate type). A sixth has a very high proportion of A with a considerable but lower proportion of B ; called Hunan, after the name of the Chinese province, it includes, besides that region, the Japanese, a part of the Koreans, and in Europe the Poles, Ukrainians and Hungarians. Lastly, a seventh type, poor in A, but the richest of all in B, comprises all the Hindus, the north Chinese, the Manchurians, and in Europe the Gipsies (Indo-Manchurian type).

Such in outline is the actual classification of races according to the serological properties of their blood. Some anthropologists have criticized it severely, going even so far as to deny that blood-groups have any ethnological value at all. They claim that from a study of it one can deduce no valid argument bearing on the relationship of races. They point out, for instance, that Hindus and Europeans have

wholly dissimilar blood, whereas there are good reasons for supposing that both are descended from a common stock ; on the other hand, the Lapps, who are of Asiatic origin and very different from the Norwegians, are made to belong with them to the European type. They argue also that Jews occur in almost all the categories, as much amongst Afro-Malays as in Europe (German Jews), amongst the Intermediates (Spanish Jews) or amongst those of the Hunan type (Roumanian Jews and Jews of Beirut). These objections have very little weight. It is now agreed that Hindus and Europeans are much less closely connected than was formerly supposed, on the strength of linguistic evidence wrongly interpreted. The Lapps have very irregular blood-formulae, and they are sufficiently intermarried with their Scandinavian neighbours to make it not at all surprising that their original blood should have been modified and now approximates to that of Europeans. Finally, we may now regard it as certain that the Jews do not constitute a true race, but a group of communities which are ethnically distinct and united primarily by a common bond of religion. It may be added that if Grove, for instance, found very different blood-formulae amongst the different Ainu tribes, that was because he did not guard sufficiently against sources of error (consanguinity) which invalidate his statistics.

On the other hand, many accurate observations, as Snyder has emphasized, confirm the real ethnic value of the reactions of agglutination, and show that populations of different blood can live side by side for centuries in the same country without their serological properties undergoing any modification, if there is no intermarriage. Thus the index of the Japanese and that of the Ainus is very different, although these two races have been neighbours in Japan for several millennia. The facts are particularly striking in the United States ; the three great races which have lived there on the same territory for three hundred years still retain widely different indices, the Indians having one of 9.5, the whites 3.6 and the blacks 1.4. Hungary provides another choice example, because in that country are brought together colonies which are ethnically very different—Hungarians from the East, Gipsies, probably of Hindu origin, and Germans of a date before the 18th century ; the study of their blood shows, in the plainest possible fashion, that the Germans of Hungary react like those of Germany, whilst the Gipsies are of the same type as the Hindus, and that the Hungarians come close to the Turks—results agreeing entirely with what we know from other sources.

We may conclude that blood-properties provide us with a genuinely

valuable means of revealing the purity of a race, and that they owe their importance to the fact that they are at once strictly hereditary and as independent as possible of environmental influences.

Certain anthropologists have gone further and tried to extract from serology information about the origin of races. The first theory of this kind is that of Hirszfeld, who was struck by observing that, as one passes from western Europe to eastern Asia, the proportion of A diminishes and that of B increases. The fact is indisputable. A passes from 45 per cent. amongst the Norwegians to 27 amongst the Manchus. In the case of B, the change is particularly striking ; one meets in turn with 12 to 14 per cent. in western Europe—20 to 23 per cent. in the Balkans—25 per cent. in the Turks and Arabs—34 to 49 per cent. amongst the Indo-Chinese, Chinese and Hindus. Hirszfeld thought that from these facts he could infer a dual origin for the human race. There would have existed, according to his ideas, two human stocks, one having group A in its blood and coming from northern and western Europe, the other, with group B, coming from the east, perhaps from India. The two stocks having mingled in the regions where they came in contact, would have given birth to an intermediate type, the B element having, for instance, been introduced into Europe with the different oriental and Mongol invasions. This view is entirely hypothetical. And while most anthropologists at the moment believe that the agglutinogens A and B may well have come into existence separately and in different regions of the earth, they will not admit a dual origin for the human race. It is known, in fact, that entirely new morphological, physiological or chemical characteristics may, in conformity with the laws of heredity, appear quite suddenly in a species. The phenomenon is called mutation, and numerous instances have been recorded in animal-breeding. According to Bernstein and Snyder the serological properties of the blood might thus have appeared as a mutation, and the human species be derived from a single stem which originally lacked both agglutinogens and agglutinins. One of the principal arguments in favour of this view is that the living representatives of races regarded as pure but on the way to extinction have group O either exclusively or at least dominant. Thus out of 112 Navahos examined by Rife, 111 belonged to group O and only one to group A. It would seem then that we may regard this group O as primitive. Starting with this primary human blood, there would have become differentiated the agglutinogen A in Europe, then the agglutinogen B in Asia ; doubtless there would also have been a supplementary mutation of A in the Far

East, responsible for the Hunan group. The supposition that group A is older than group B rests on the fact that there are several races, such as the Australians, who have group A but not group B, whilst none are known to have group B without group A. According to this view, the fact that pure-blooded Indians are all of group O would prove that they became separated from the Mongolian peoples before the appearance of any blood-mutation ; and the fact that group A but not group B occurs amongst the Australians would be evidence of their having been isolated from their stock during the period that elapsed between the two mutations.

These views are strongly in favour at the moment. Professor J. B. S. Haldane expounded them eloquently in a discourse before the Royal Institution some years ago.* We must however face the fact that they are largely hypothetical, and personally I can hardly admit them. Why, for instance, should the Senegalese have 19 per cent. of B, when they do not appear to have any trace of Mongolian admixture ? One is driven to assume an independent mutation of B in Africa, which merely complicates matters. But above all the fact that human agglutinins and agglutinogens are found amongst the anthropoid apes seems to us to have a very important bearing on the problem, and to show in the clearest possible way that blood-groups have existed for a very long time indeed. Their recent simultaneous origin in monkeys and men is, in fact, most improbable ; is it not more natural to suppose that the common ancestors already possessed agglutinogens ? We will confine ourselves to saying, finally, that if a character can appear by mutation, it can also disappear by the same process ; and it should be remembered that the majority of the mutations observed in the course of animal-breeding are regressive, and consist in the loss of a structure or of a differentiation, not in the appearance of a new character. Is it not more satisfactory to regard the Redskins, for example, as Mongoloids who have lost agglutinogen B than to suppose that they left Asia before the appearance of the mutation ?

We may conclude that, while the study of the reaction of agglutination may not be able of itself to solve any anthropological problem, and while no complete racial classification can be founded upon it so that up to a point it may have betrayed the somewhat fantastic expectations aroused at the start, yet it does provide means of appraisement which are of great interest, complementing and checking those derived

* See Note at end, no. 1.

from other sources. No serious anthropological enquiry can in future dispense with it.

Let us state, in conclusion, that the agglutinative properties are not peculiar to the blood. They are found precisely the same in the different secretions—milk, saliva, gastric juice, bile, sperm ; they are even found in the minced tissue. They are a constitutional feature of the whole organism. They are obtained from the blood merely because they are easier to detect there.

Note

The following articles in English deal with the same subject :—

1. Prehistory in the light of genetics ; a discourse delivered at the Royal Institution on Friday, February 20, 1931. Printed in ' The Inequality of Man, and other essays ', by J. B. S. Haldane. London, Chatto and Windus, 1932, pp. 63–77 (blood-groups, pp. 63–70).
2. Blood-groups and physiognomy of British Columbia coastal Indians, by R. Ruggles Gates and George E. Darby. *Journ. R. Anthr. Inst.* 1934, LXIV, 23–44.
3. Eskimo blood-groups and physiognomy, by R. Ruggles Gates. *Man*, 1935, no. 36.
4. Gates. *Heredity in Man*, chapter IX. (Constable, London).
5. The distribution of the blood-groups, by Allison Davis. *Sociological Review*, 1935, XXVII ; January, pp. 19–34 ; April, 183–200 (with list of books cited).
6. The relation of blood-groups to race and some particulars of the Southwest Pacific, by H. J. T. Bijlmer. *Journ. R. Anthr. Inst.* 1935, LXV, 123–31.

The Site of the Palace of Odysseus

by W. A. Heurtley

MANY Homeric scholars who believe that modern Ithaca is the Ithaca of the Odyssey have selected the hill of Pelicáta (fig. 1) in the north of the island for the site of the palace of Odysseus.[1] Apart from considerations of Homeric topography, it is, in fact, the one spot in Ithaca which, on the analogy of Mycenaean sites elsewhere, strikes the eye immediately as suitable for a Mycenaean prince's citadel. It is sufficiently high; from its summit a ship entering any of the three harbours at the north end of the island can be seen; yet it is sufficiently distant from them all to be secure from any sudden attack by pirates.

The appearance of the hill (fig. 5) must have been different in antiquity from what it is today, for its features have been changed by physical causes and the hand of man. For the effect of denudation there is good evidence towards the north of the hill. Here a rock-cut oblong grave, which must originally have been below the surface of the ground has been left, owing to the washing away of the soil, two metres above the present ground-level (fig. 9).[2] But man has done most to change the aspect of Pelicáta, of which the barren slopes have been converted in course of time into a series of terraces for cultivating the vines. Terracing involves, as is known, the double

[1] Lord Rennell, to whose interest the excavations have been due, thinks that the city lay at Pelicáta, but the palace at the site of Hagios Athanasios, more than ten minutes distant (fig. 5). For various reasons I cannot agree, and chiefly because in Mycenaean times palace and town were closely united, in conformity with the feudal character of Mycenaean society. At Hagios Athanasios there is nothing demonstrably Mycenaean above ground, and our trial-pits revealed only three Mycenaean kylix-stems among a mass of Hellenistic and later pottery. The remains are best explained as those of a sanctuary, raised in honour of some god or hero, whose cult may have originated there in Mycenaean times. For Lord Rennell's views, cf. *Annual of the British School at Athens*, xxxiii, p. 1 *sqq.*

[2] Cf. Partsch, *Kephallenia u. Ithaka*, p. 60.

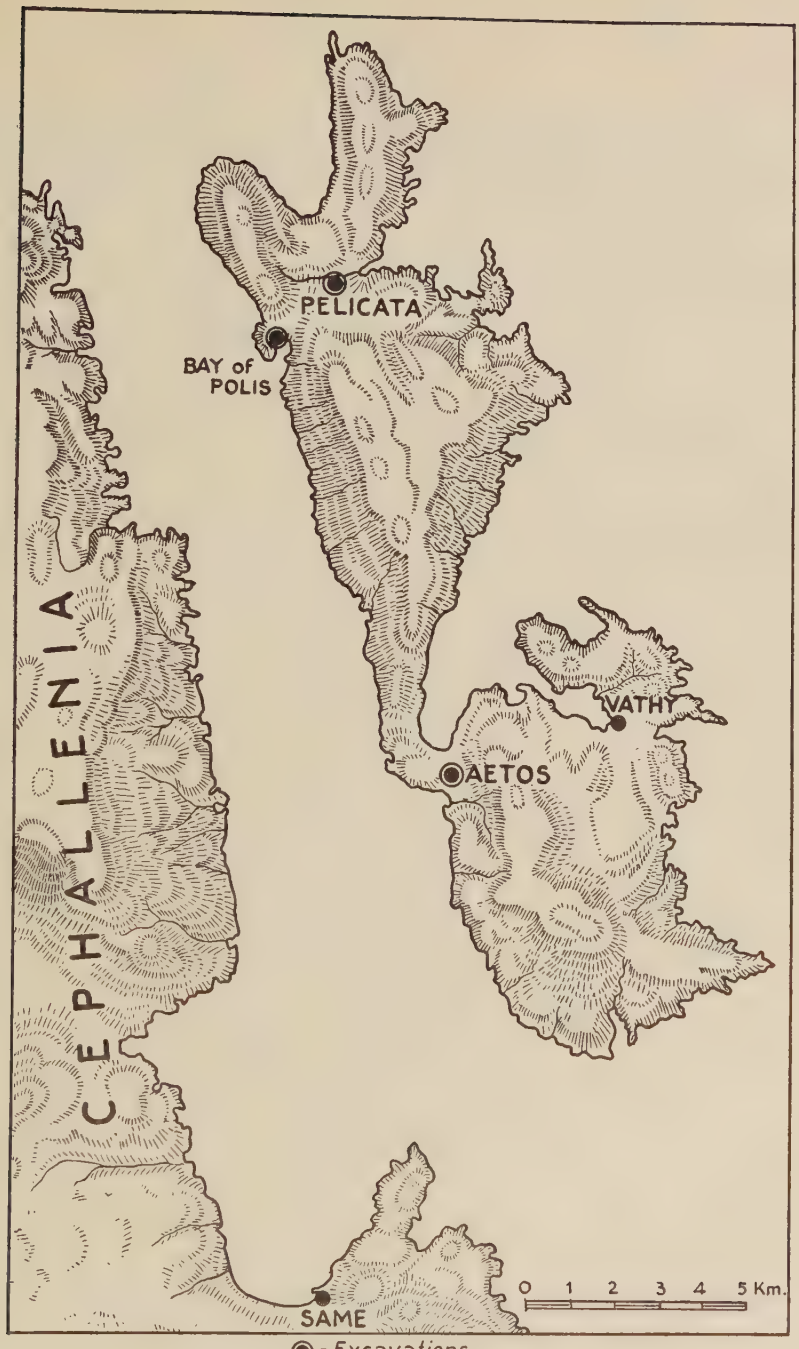

PELICATA
BAY of POLIS
VATHY
AETOS
CEPHALLENIA
SAME
0 1 2 3 4 5 Km.
◉ = Excavations

Fig. 1. ITHACA

process of cutting away and levelling up ; the material obtained by cutting away (and anything else that happens to be handy) being used for the levelling up. The filling has, of course, to be kept in place by a wall of stones, and for this wall any stones which are lying about are requisitioned.

Thus the summit of Pelicáta hill appears today as a fairly level space, the limits of which coincide roughly with the contour line 150 (FIG. 2) but this level space is not entirely natural, being in places (FIG. 2, areas IV and VI) composed of filling held in place by terrace-walls. The composition of this filling is interesting (FIGS. 3, 4). It consists of stones, unworked and small, mixed with which are bits of clay bearing the impress of reeds, sherds and domestic objects such as mill-stones, pivot stones, mortars, stone-axes and clay spindle-whorls—evidently remains from houses with rubble walls and thatched roof plastered with clay, which stood on the summit and of which the debris, after they had collapsed, was shovelled down the slope, the terrace-wall having been first built to retain it. The thickness of the filling varies of course according to the formation of the ground. Above the stones is dark soil of an average thickness of 50 cm. in area IV and of about one and a half metres in area VI, also containing sherds and domestic objects. This soil may represent the successive house-floors which would be shovelled in after and on top of the rubble-walls, and which, as being composed of the accumulated rubbish of a long period of occupation would make suitable soil for cultivation.[3]

All the pottery from areas I, II and III, as well as from the numerous trial-pits sunk elsewhere on the summit, and practically all from areas IV and VI was Early Helladic (FIG. 6), of the same character as that known from Early Helladic strata on the mainland. But in area IV seventy 'Minyan' (Middle Helladic) sherds were found, nearly all of the blue-grey colour characteristic of West Greek sites and of Thermos in Aetolia : some were fragments of high-handled cups with incised spirals below the handles (FIG. 7 : 3, 4, 7). Twenty similar sherds were found in area VI, all from the earth above the stone filling, but associated with them here were also sixty Mycenaean sherds (FIG. 8) thirty of which are kylix-stems (FIG. 8 : 5) such as belong to the middle of the Late Helladic III period, but are extremely rare in its latest

[3] Of the other areas cleared, III was rather similar to those described ; in II and V rough cobble pavements lay just below the surface, I contained pithos-burials lying below collapsed house-walls. All, except V, which was lower, were within or just on contour-line 150 (fig. 2).

FIG. 2. PELICÁTA (CONTOURS IN METRES ABOVE SEA-LEVEL)

phase.[4] The low stems (FIG. 8: 1–4), are more difficult to place, but they resemble the stems of the kraters in the contemporary group from Lakkéthra in Cephallenia.[5]

The 'Minyan' and Late Helladic sherds are so scarce in comparison with the enormous quantity of Early Helladic, with which they were mixed, that it is impossible to believe that there was a pure 'Minyan' or Mycenaean settlement; and the inference may be drawn that in Ithaca, 'Minyan' and Mycenaean influences were only thinly spread over an earlier civilization which continued to survive. This problem does not however here much concern us (though I think that in Ithaca, as in Macedonia, an older civilization *did* persist), but what does concern us is that we have here the evidence from its pottery that a house was standing on the summit of the hill in the late Mycenaean period, but (what is especially to the point), that the occupation ceased about, or a little after the time at which, according to tradition, the Trojan war took place.[6]

In addition to the houses with rubble walls, there is evidence that houses built of better material also existed here. Scattered about on the top of the hill (FIG. 10) near area VI, and incorporated in rough walls at numerous points in its neighbourhood are many dressed blocks such as the modern builders of walls would hardly go to the trouble of making. The inference is that they found such blocks at hand and if so, there must have been some building, constructed of fairly good masonry, to which the blocks belonged. Now, in spite of the numerous trial pits which we opened on the hill on Pelicáta (FIG. 2) no pottery or objects of later date than the Mycenaean came to light, if we except those associated with a few graves, assignable to the Hellenistic age and all outside the circuit wall.[7] It is unlikely[8] that, if the summit had been occupied in Hellenistic times, Hellenistic pottery should not have been found there in the course of our excavations. Thus the building, whatever it was, appears to be not later than the Late Mycenaean period and since the stones in question are close to the area where the

[4] *i.e.*, the 'granary' style phase (for which Gjerstadt has suggested the name LH IV), which the evidence from Cyprus and Palestine shows to belong to the twelfth century, rather than to the eleventh. Cf. *Quarterly of the Department of Antiquities in Palestine*, vol. V, p. 109.

[5] Cf. Ἀρχαιολογικὴ Ἐφημερίς, 1932, pl. V, especially 14.

[6] Cf. note 4. No 'granary' style pottery was found.

[7] Or its apparent line. Cf. next paragraph.

[8] But not, of course, impossible.

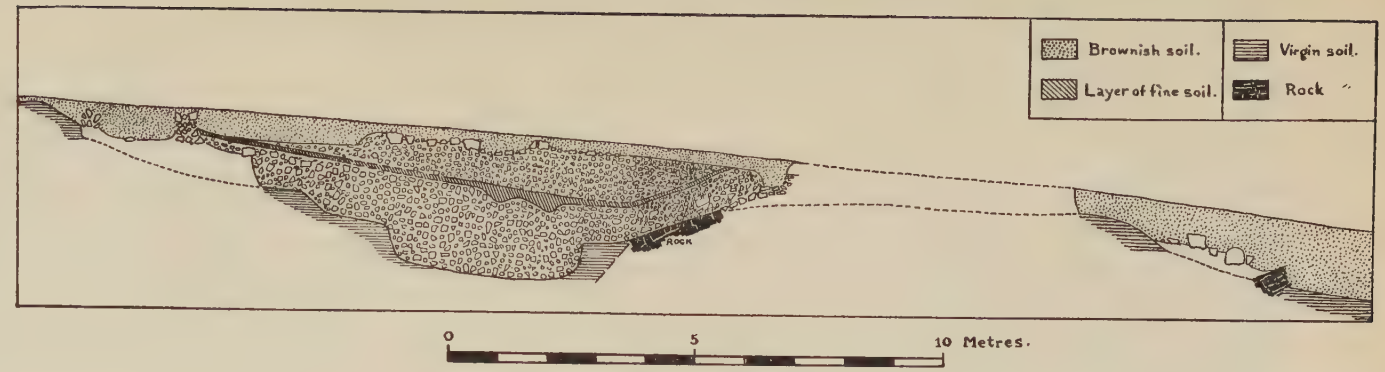


FIG. 3. AREA IV, SECTION EW

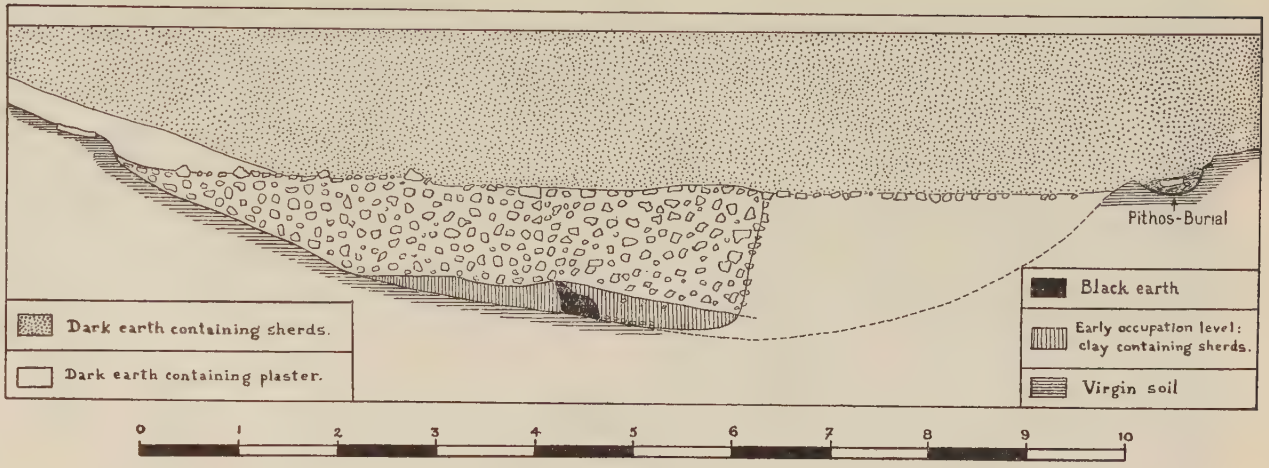


FIG. 4. AREA VI, SECTION EW

Late Helladic III sherds were found, it is at least likely that sherds and building, to which the stones belonged, are contemporary. It is thus arguable that these stones are remains of a Mycenaean building.

In addition to the building or buildings of good masonry, a circuit wall with a foundation of roughly hewn blocks once enclosed the summit. The foundation is *in situ* in one place (FIG. 12) and the approximate line can be picked up in at least two places (FIG. 11)[9] and elsewhere are many blocks which have been displaced from it, but which, on account of their size, cannot be far from their original position. Most are in the neighbourhood of contour line 145 (FIG. 2).[10] Though not enough of the wall is left to enable us to decide on purely architectural grounds to what age it belonged or what was the nature of the upper part, the absence of later pottery that can be associated with it, makes it unlikely that it is later than the L H III period, and on the analogy of the fortification-walls of Mycenae and Tiryns, may well belong to that period. Actually the pottery associated with the wall (*i.e.*, against, below and in one case, between the blocks), was Early Helladic, and, though this is not inconsistent, as has been seen, with an L H III date, may mean that it is earlier still. But in any case it can hardly be later.

To resume the evidence : we have at Pelicáta,

(1) A site naturally adapted for a Mycenaean citadel, and one selected by many scholars, on topographical grounds, as the site of the palace of Odysseus.

(2) Evidence of an extensive pre-Mycenaean settlement, which there is reason for thinking was continuously occupied until and during L H III times.

(3) Late Helladic III sherds, belonging to the phase that preceded the traditional date of the Trojan war, and none later.

(4) Traces of buildings of good masonry on the summit and of a circuit-wall just below it, neither of which seem to be later than that period and both of which may belong to it.

The cumulative value of all this evidence is respectable, and if we add that of the Mycenaean sherds (also 13th century), found by us at Stavrós, and at the fountain of Asprosykiá, a short distance from it, and if we add that of the ex-voto plaque, bearing the inscription ' a vow to Odysseus ', found in the cave-sanctuary at Polis, which shows that the

[9] The places are marked x in FIG. 2.

[10] On the west, near contour-line 150.

PLATE I

FIG. 5. PELICÁTA, FROM SOUTHWEST. (A) SUMMIT (B) HAGIOS ATHANASIOS

facing p. 416

PLATE II

Fig. 6. EARLY HELLADIC POTTERY

PLATE III

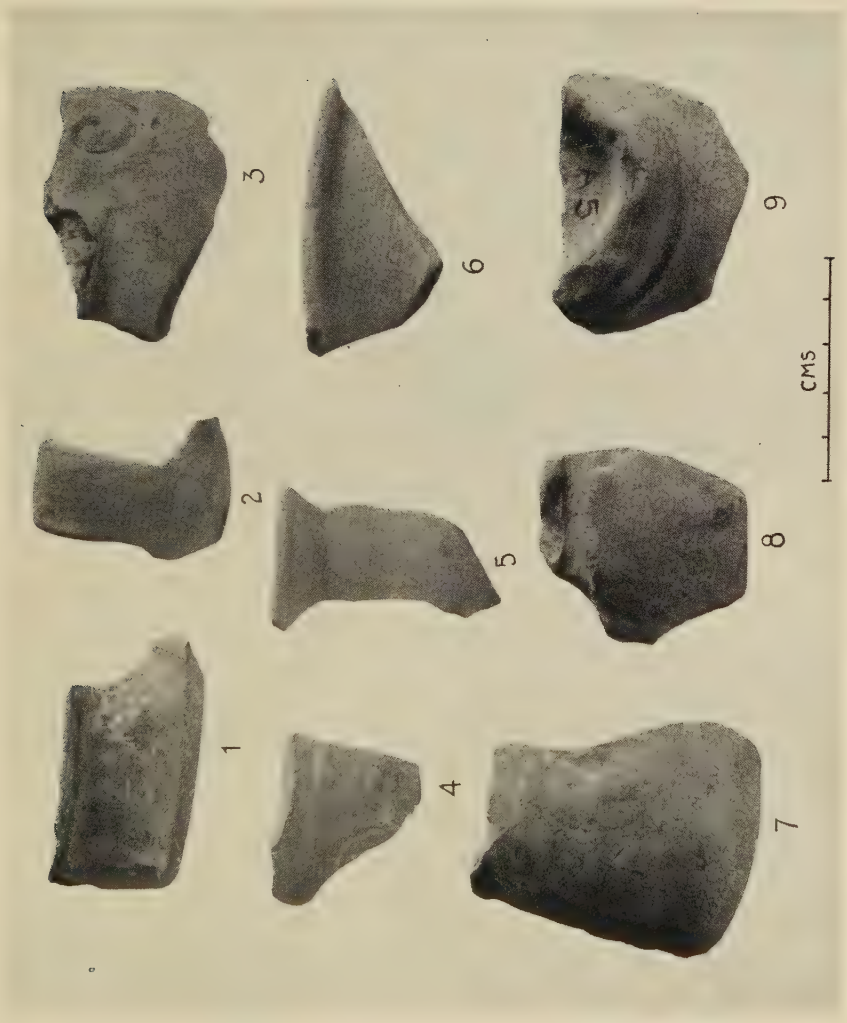


FIG. 7. 'MINYAN' (MIDDLE HELLADIC) POTTERY

PLATE IV

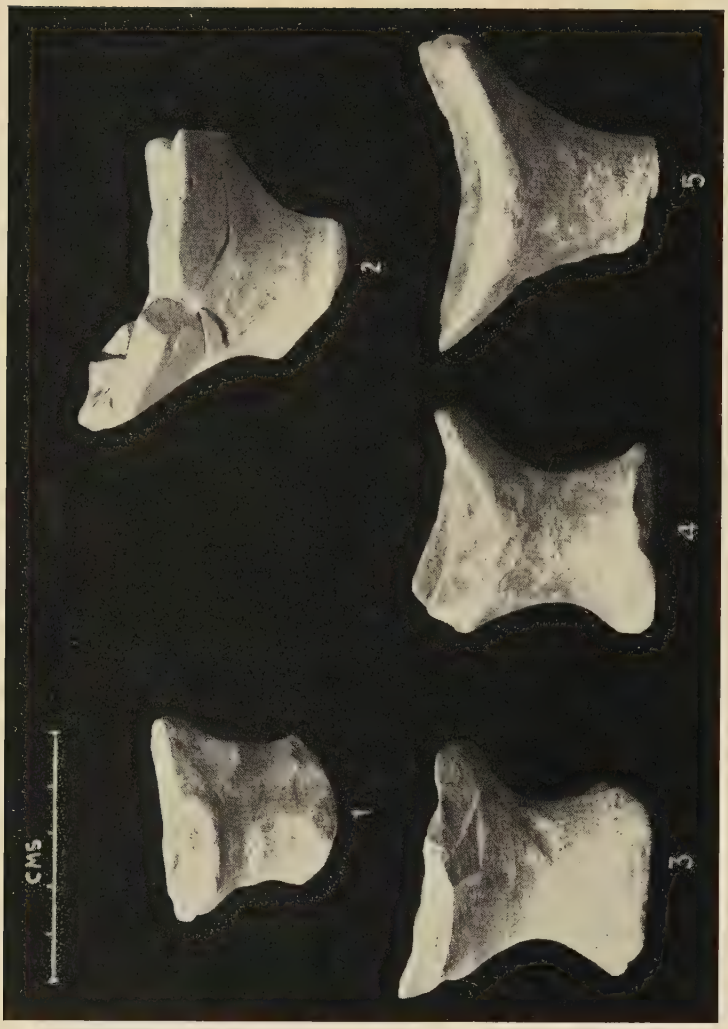


FIG. 8. MYCENAEAN FRAGMENTS

PLATE V

Fig. 9. ROCK-CUT TOMB

Fig. 10. DRESSED BLOCKS, POSSIBLY OF MYCENAEAN DATE

PLATE VI

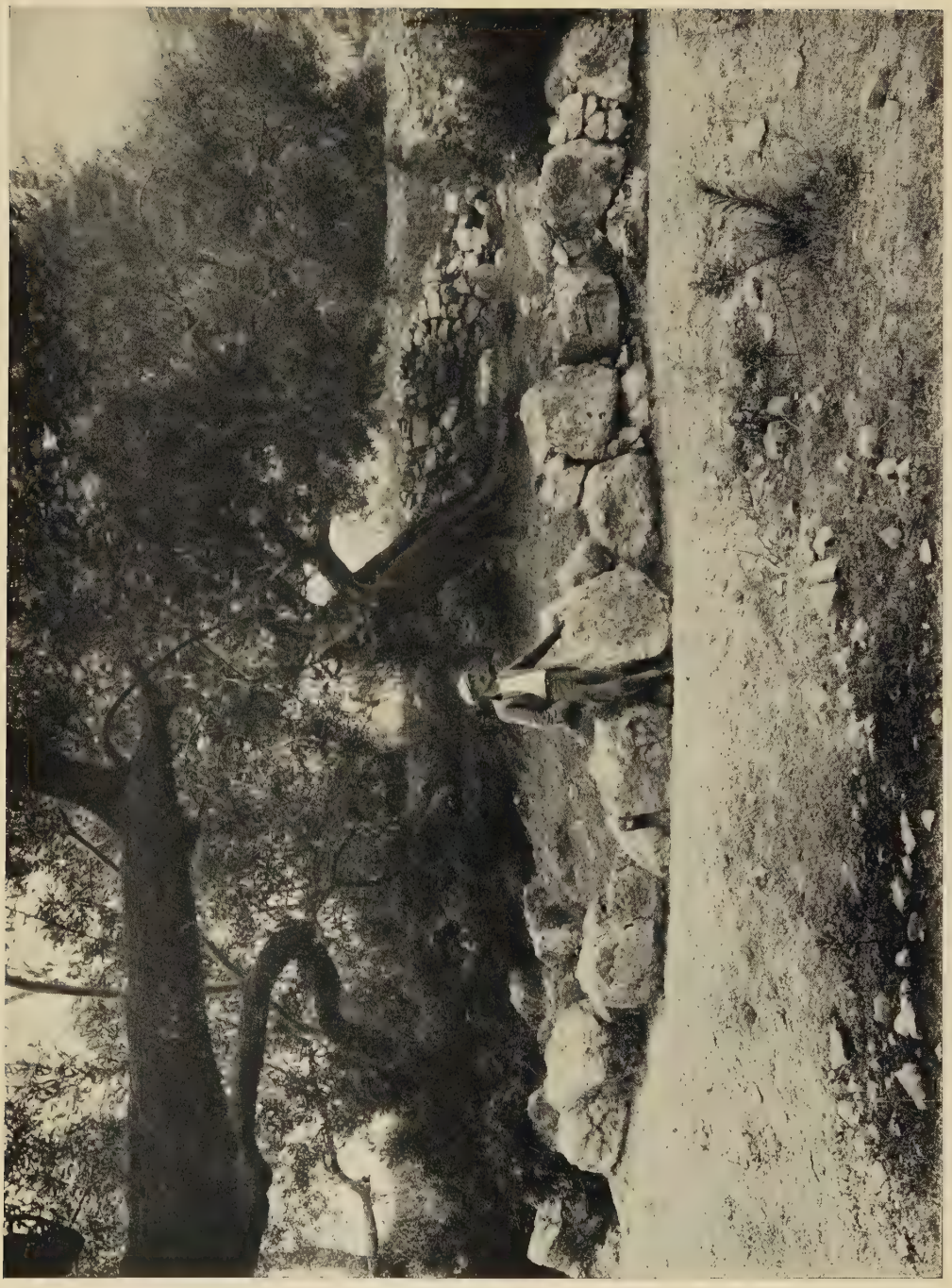


FIG. 11. REMAINS OF ANCIENT CIRCUIT WALL

FIG. 1. LOWEST COURSE REMAINS OF ANCIENT CIRCUIT WALL, PROBABLY *IN SITU;* UPPER PART MODERN

place was associated with Odysseus several centuries after his death, it is clear that those who hold, on other grounds, that the hill of Pelicáta was in Homer's mind, when he described the palace of Odysseus, the city and its fountain, may now support their view by a certain amount of archaeological evidence.

The excavation of Pelicáta was part of the archaeological exploration of Ithaca, conducted by me on behalf of the British School at Athens, whose Committee I wish to thank for permission to use the photographs and plan published here.

The Magic of Saint Oswald

by Wilfrid Bonser

IN his article on the ' magic ' of Columba (Antiquity, June 1934), Mr Crawford uses this pagan word to signify the supernatural power which was ascribed to a Christian saint with regard to certain supernatural acts. In my title I am using the word ' magic ' in the same sense, but I am limiting the scope of this article to the use of this magic by the Church after the saint himself was dead.

King Oswald of Northumbria was the first English martyr—Saint Alban being the first British one. Perhaps more miraculous cures are associated with him than with any other Anglo-Saxon saint.[1]

Cures were attributed to the cross which he set up on the Heavenfield before his victory there over the heathen Cadwalla. Bede says that

> in that place of prayer very many miraculous cures are known to have been performed as a token and memorial of the king's faith ; for even to this day [*i.e.* a century later] many are wont to cut off small chips from the wood of the holy cross, which being put into water, men or cattle drinking thereof, or sprinkled with that water, are immediately restored to health.[2]

Particulars of one more miracle through this medium are given. A monk of Hexham named Bothelm, who was still alive when Bede was writing, fell one night on the ice and broke his arm. A fellow monk was visiting Oswald's cross soon after, and brought him some of the old moss which grew on the surface of the wood. This the sick man put into his bosom, and awaking in the middle of the night, ' he found his arm and hand as sound as if he had never felt any such pain '.

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[1] Details given by Bede in his Ecclesiastical History, book III, chapters 1–13.

[2] A similar story is told by Bede (E.H. III, 17) in connexion with Aidan. He died leaning against the post used to strengthen the wall of a church. Later the church was burned by Penda, but the post ' could not be consumed by the fire which consumed all about it '. The church was ' rebuilt in the same place, and that very post was set up on the outside, as it had been before, to strengthen the wall . . . And it is manifest that since then many have been healed in that same place, as also that chips being cut off from that post, and put into water, have healed many from their distempers '.

THE MAGIC OF SAINT OSWALD

King Oswald fell in battle at Maserfield in 642, fighting against the heathen Penda of Mercia.

> Wherefore many took up the very dust of the place where his body fell, and putting it into water, did much good with it to their friends who were sick. This custom came so much into use that, the earth being carried away by degrees, there remained a hole as deep as the height of a man.[3] (Bede).

It is not said if the earth at the bottom of the hole was less efficacious for healing than that at the top : the faith was evidently strong enough to surmount such a possible deficiency.

Some thirty years later Oswald's niece, Osthrida, queen of the Mercians, removed his bones to her monastery of Beardeneu [Bardney] in Lindsey. The monks would not at first give admittance to the relics, as being those of a foreigner who had subjected them to his rule and was therefore distasteful to them. The bones lay in a wagon outside the gates all night; but ' a pillar of light[4] reaching from the wagon up to heaven, was seen by almost all the inhabitants of the province of Lindsey '. The monks then received the bones, and having washed them, placed them in a shrine. The virtue in them at once became apparent. The monks ' poured out the water in which they had washed the bones in a corner of the sacred place. From that time the very earth which received that holy water had the virtue of expelling devils from the bodies of persons possessed '.

Bede gives details of two cures at Bardney. The first is that of a man ' who was on a sudden seized by the Devil, and began to gnash his teeth and foam at the mouth '. None could restrain him, nor were ' the prayers that were prescribed against that disease '—*i.e.* the usual form of exorcism used by the Church—of avail, but as soon as a casket containing the above mentioned earth was brought into the room, the patient fetched a deep sigh and said that all the evil spirits that vexed him had departed, and were no more to be seen. He was given a little of the earth to keep, presumably in case of a recurrence. The other cure was that of a little boy at the monastery who was troubled with an ague. One of the monks instructed him, ' Go into the church, and get close to S. Oswald's tomb ; stay there quietly and do not leave it until the time that your fit is to go off ; then I will go in and fetch you away. The boy did as he was advised, and the disease durst not affect him as he sat by the saint's tomb, but fled so absolutely that he felt it no

[3] Similarly with the earth where Aldhelm died : see Bede, E. H. v, 18.

[4] This is the usual method of revelation of relics and holy things.

more '. The ague, as is usually the case, appears to have been regarded as a person.

After his death, Oswald was dismembered by Penda, and it is interesting to follow his various members in their travels. Penda caused the head and arms and hands to be set upon stakes, but Oswy took them down next year. He buried the head at Lindisfarne, and the arms and hands at Bamborough, where they were wrapped in a pall and enclosed in a costly shrine.[5] In 875 the monks of Lindisfarne fled before an incursion of the Danes, and carried the head, together with the body of Cuthbert, with them. It accompanied them in their wanderings from place to place until it finally rested at Durham. It was found in Cuthbert's tomb when this was opened in 1105, and the frontal bone of the king was again found and replaced when the coffin was examined in March 1899.[6]

But the majority of the miracles were connected with the right arm and hand. Aidan had once sat next to the king when he was distributing food to the poor, and, struck with his piety, had ' laid hold of his right hand and said, " May this hand never perish ". Which fell out according to his prayer ', continues Bede, ' for his arm and hand, being cut off from his body when he was slain in battle, remained entire and uncorrupted to this day, and are kept in a silver case, as revered relics, in S. Peter's church in the royal city ' [Bamborough]. They were stolen from Bamborough by a monk of Peterborough named Vynegot in the time of Abbot Elsin (died 1055), who was a most diligent collector of relics. Peterborough's ' most precious relic ', says Hugo Candidus, the abbey's chronicler who wrote in Henry II's reign,

> is the right arm and hand of S. Oswald, remaining whole in flesh and skin after the blessing of S. Aydan, the bishop : this we have seen with our own eyes and have kissed and handled and washed when it was shown to Alexander, bishop of Lincoln [and others] . . . 487 years after the martyr was killed . . . They also possess one of his ribs and some of the ground on which he was killed.[7]

When Peterborough was burned by the Danes and Hereward the Wake in 1070, prior Athelwold saved the arm and hand by secreting

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[5] Simeon of Durham, ' History of the kings of England ', under date 774, and again in his history of the church of Durham, chap. 2.

[6] *See* J. C. Wall, *Shrines of British Saints* (Antiquary's Books, 1905), pp. 206–7. The statue of Cuthbert in Henry VII's chapel at Westminster represents him as carrying the crowned head of Oswald in his left hand.

[7] Hugo Candidus, p. 34, in ' Historiae Coenobii Burgensis scriptores varii ' (ed. Sparke, 1723).

them in the straw of his bed.[8] The monastery was again burned down in 1116, and the new church was not opened for worship until 1140. At the opening ceremony the bishop of Lincoln and the abbots of Ramsey and Thorney were present. 'The arm of S. Oswald was on show', says Hugo,

> but first [it] was shown to Abbot Martin who desired to see it either out of curiosity, or because he doubted if it were whole . . . They opened the case and brought it out whole and with it blessed the whole congregation, and washed it in great fear as they had done before in the time of Abbot Matthias. Many of the monks who were sick men when they entered the church were [completely] cured. And the third time that it was shown was to King Stephen when he came thither and offered to it his ring.

'Through the merits of S. Oswald', continues Hugo, 'and through the water in which the arm is washed, many sick persons are healed and are liberated from demons and *paralytici* and *frigoritici* are cured'. Two examples of such cures follow. 'The water was carried through many districts and drunk and many were cured according to the faith of each one. It was taken to London, and we know that innumerable persons were cured there, wherefore his altar in the crypt of S. Paul's was held in great veneration'.[9]

The left arm seems to have been preserved at Gloucester. Like other relics, however, king Oswald's arms showed a tendency to multiply, for another copy of the left arm appears to have existed at Durham, and an arm (which of them not being specified) is mentioned in an inventory of 1245 of S. Paul's Cathedral, London.[10]

The body of the king was probably buried first at Oswestry, but was taken thence to the abbey of Bardney in Lindsey, as already mentioned. The Anglo-Saxon Chronicle says that his bones were removed thence by Ethelflaed, Lady of the Mercians, to a monastery built in his honour at Gloucester. This was owing to a war of Edward the Elder with the Danes in Northumbria.

Many of Oswald's relics were also transferred to the continent. The cathedral of Zug, for instance, received some on its dedication to him in 1478; that of Hildesheim still possesses in its treasury a 13th century casket which is said to contain a head of Oswald, the crown of

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[8] Hugo Candidus, p. 50.

[9] *Ibid.*, pp. 77–8.

[10] 'Brachium Sancti Oswaldi coopertum foliis argentiis, praeter manum'.—W. Sparrow Simpson, 'Two inventories of the cathedral church of St. Paul, London'. (*Archaeologia*, 1887, vol. 50, p. 470).

which is of 11th century workmanship. Bede speaks of his renown spreading to Germany and Ireland, and gives details of a cure in the latter country. A 'certain scholar of the Scottish race' being about to die—presumably through fear that he should be carried away to hell for his sins—asked Acca if he had in his custody any relics of Oswald, since he thought it was possible that through them his life might be prolonged. Acca replied, 'I have some of the stake on which his head was set up by the pagans, and, if you believe with a sincere heart, then the Divine Goodness may, through the merit of so great a man, both grant you a longer term of life here and render you worthy of admittance into eternal life'. When the patient had assured him of his faith therein, Acca blessed some water, put into it a chip of the stake, and gave to the sick man to drink. Needless to say he recovered and, changing his mode of life, lived for a long time after.[11]

It is interesting to note from the stories in connexion with these relics, the means employed for extracting 'virtue' from them, so that it might be applied for healing purposes.

The four sources of virtue in connexion with Oswald were (a) the cross which the king set up, (b) the stake on which his head was impaled, (c) the ground on which he fell, and (d) the various parts of his body. The chips of the cross and of the stake were immersed in the water whereof the patient drank: the water in which the uncorrupted arm had been washed was also given by the Peterborough monks to the sick to drink: but the mere presence of the earth or dust appears to have been sufficient to give the necessary faith to the sufferer. The dust and water cures seem to have been combined with regard to the bones, for apparently after the water in which these were washed had been poured on the ground, this earth when dried to dust was considered to retain the healing properties derived from the water. This may have been used as a plaster, possibly its mere presence again sufficed.

If a cure was not effected at one shrine, a patient might be carried to others in turn. Each monkish chronicler was naturally keen for the reputation of the relics at his own monastery, and uncritical of the medical aspect.

It is obvious that the faith—or credulity—of the ordinary patient was such that, once the healing reputation of a relic had been established, its possessors by their ingenuity were able to work the oracle in various ways. When, instead of doing good merely for the glory of their

[11] Bede, E. H. III, 13.

religion, the element of greed entered in, and when payment was demanded in return for the cure, the spirit of the early Anglo-Saxon Church entirely disappeared. The atmosphere of deceit already prevailing on the continent only entered in when the religious life in this country began to decay. This is well illustrated by the appearance of the duplicate copies of Oswald's arms already mentioned.

There is no reason, however, to suspect that the various Anglo-Saxon relics which were preserved in the earlier period were other than the genuine articles. The purity of the early Church in England was too great and the sincerity of the higher clergy is too obvious from the accounts preserved by Bede and others. The Anglo-Saxon saints were men and women of great sanctity in the eyes of their contemporaries who, realizing this, conserved their relics as the greatest treasures they possessed. They also believed in these early days in the efficacy of the relics for healing purposes. Being the most accredited physicians of their time, they nobly did their duty in effecting ' faith-cures ' by these means wherever possible.

Recent Books on British Archaeology

by W. F. Grimes

THE problem set to the reviewer who seeks within a few short pages to comment upon a number of books as varied as the present, is not an easy one. Detailed criticism or commendation is obviously impossible ; but since in their different ways these books* illustrate very well the range of contemporary archaeological work in this country, I have selected certain features to which they bear some relation, and which seem to be of sufficient interest and importance to warrant discussion.

One of the most striking features which must present itself to the reader of Kendrick and Hawkes or of the Congress Publications is the way in which new methods have changed the face of archaeology in Britain.

Mr O. G. S. Crawford has dealt elsewhere[1] with the development of the study of antiquity, and has shown how what may be called a collector phase dominated the situation for many years.

The preoccupation with the specimen for its own sake which resulted from this phase culminated in the production of elaborate typological sequences, the outcome of which was to establish a chronological system with clear-cut divisions, each having its own group of characteristic forms of implements and so on.

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* Archaeology in England and Wales, 1914–1931. *By* T. D. Kendrick *and* C. F. C. Hawkes. *Methuen*, 1932. *pp.* xx, 371, 30 *plates*, 123 *text-figures*. 18*s*.

Proceedings of the First International Congress of Prehistoric and Protohistoric Sciences, London, August 1932. *Oxford University Press*, 1934. *pp.* vi, 322. 21*s*.

A Handbook of the Prehistoric Archaeology of Britain. *Oxford University Press*, 1932. *pp.* viii, 75, 22 *text-figures*. *Price not stated.*

An Introduction to the Archaeology of Wiltshire (*2nd edn., revised and enlarged*). *By* Mrs M. E. Cunnington. *Devizes : C. H. Woodward*, 1934. *pp.* xii, 167, 43 *text figures*. 4*s*.

Celtic Ornament in the British Isles down to A.D. 700. *By* E. T. Leeds. *Oxford University Press*, 1933, *pp.* xx, 170. 12*s* 6*d*.

Congress of Archaeological Societies : report of the 40th and 41st congresses and of the Research Committee for 1932, 1933. *London*, 1935. *pp.* 60. 1*s*.

[1] *The Sociological Review*, April-June, 1932.

While no one would seek to decry the value of these sequences, since they may sometimes provide a chronological basis upon which to build, clearer insight into the activities of early man has been obtained by studying, not so much the internal evidence of the specimen, as its cultural significance and external relations to its context. Purely typological studies, by failing to take account of these other factors, may entirely obscure the cultural changes which are the real stuff of which civilization is made.

Divisions are therefore being based more and more upon cultural phases, instead of upon a purely chronological scheme whether relative (in terms of sequences) or absolute—the latter in any case being still largely a matter of uncertainty at the present time ; and such an arrangement meets much more satisfactorily the special needs of a country like Britain, with its unique position in relation to the continental sources of culture, and its own internal arrangements.

In the study of all phases from the dawn of the human period downwards these changes appear. In the Bronze Age, for instance, the chronology proposed by Montelius, with its five phases based upon a purely typological classification, has now been replaced by a simpler arrangement of Early, Middle and Late, which has a more direct bearing upon the course of events as they are now known. The Early phase thus becomes the period of Beaker dominance, the Middle that of consolidation and development of the fused elements of beaker and pre-beaker stock (the latter predominating) into a ' native ' Bronze Age culture ; while the Late Bronze Age witnesses a fresh series of invasions bringing the continental Late Bronze culture. The result is to re-create the Bronze Age as a vital phase in human prehistory : things are given their correct relation to the men who made and used them, and one is spared the uncomfortable and bewildering sense of delving into a catalogue of prehistoric hardware.

In the Iron Age also the continental divisions of Hallstatt and La Tène have now been generally replaced, as far as this country is concerned, by a three-fold cultural division of Iron A, B, and C[2], even when, for purposes of general chronology, the sub-periods of the older system are retained.

Mr Leeds's monograph on the art which was perhaps the most outstanding product of the Age is of some interest for the question of

[2] Since the above was written Dr Wheeler has suggested further modifications of this classification. *Antiquaries Journal*, 1935, pp. 273 ff.

method with which we are at the moment concerned. Here it may be suggested that Mr Leeds's treatment commands the greatest degree of acceptance in the present state of knowledge, where it relies upon external evidence such as association and distribution in conjunction with the internal evidence of typology and style. Thus his recognition of various schools of Celtic art, closely linked (as in the case of the western school with the southwestern part of the Iron Age B movement) with one or other of the cultural phases must appeal to most people who are familiar with the material. There can be little doubt that these divisions will stand the test of time, at least in broad outline. When, however, reliance is placed upon internal evidence to the exclusion of other factors such as association, the more cautious amongst us may perhaps be forgiven if we hesitate—even while acknowledging the force of Mr Leeds's arguments—to carry subjectivity so far.

Recent years have seen also a growing realization on the part of archaeologists of the value of the results which may be obtained from the cooperation of the more securely-established natural sciences. One of the oldest examples of this is of course Zoology, which by identifying the animal-remains in the deposits has enabled the climatic conditions of the various phases of the palaeolithic to be established. More recently the methods of Botany in the pollen analysis of peat deposits,[3] and of Geology in the identification of the source of the ' blue-stones ' of Stonehenge, may be mentioned as extensions of the same idea.

At the present time only the fringe of this aspect of our work has been touched, but it is at least possible that mutual advantage will result from it. The solution of such geological problems as the dating of the comparatively late land-movements, for which there is evidence in submerged land-surfaces and other remains about our present coasts, may well be assisted by the presence of human artifacts which the archaeologist may be able to place with some precision. This, indeed, has already to a certain extent been done, but a greater awareness of the problems, and the development of methods of co-ordination, should enable us to make fuller use of the opportunities which will present themselves in the future. So, too, the zoologist[4] or the botanist may obtain useful information bearing upon the history of animals or plants from the presence of their remains in archaeologically-dated deposits. We may therefore reasonably suppose that all branches of study will benefit from the association. At the same time, it is well for

[3] *Congress Proceedings*, p. 105. [4] *ibid.*, pp. 151 ff.

archaeologists to remember the obligations which the methods and materials of the older sciences must legitimately impose on them.

It goes without saying that non-archaeological material of botanical, geological or other interest will be preserved with the same care as purely archaeological evidence by any competent excavator whose aim is to extract the fullest information from his site. The importance of such material for the question of environment—quite apart from its potential value from the purely botanical or geological point of view—must be self-evident ; but its full value can only be realized when every precaution is taken to preserve structure and other features (as, for instance, ancient timbers) as unimpaired as possible.

There are also, however, certain types of archaeological material for the fullest use of which the methods of the other sciences have to be employed. And here various considerations suggest that we are not yet entirely free from the view (a relic of the collector-phase to which we have already referred) of our specimens as almost sacrosanct and an end in themselves, to be preserved unsullied at all costs. This is particularly the case if the specimens happen to be ' good ' ones ; but if all classes of archaeological material are to be utilized to the utmost, to extract from them the greatest amount of information relating to man and his works, it is clear that this view must go.

One of the most interesting and valuable developments of collaboration between archaeology and geology has been in the determination of the sources of rock materials. Obviously the best example of this is the now famous identification, due to the late H. H. Thomas, of the source of the ' blue-stones ' of Stonehenge in the Presely mountains of southwest Wales. The method has, however, already been applied, though on a limited scale, to the materials of which ' green-stone ' polished or ground axes were made, and already important facts are beginning to emerge.

There is, for instance, the presence in Wiltshire of axes of igneous rocks which are at home in North Wales ;[5] while conversely flint axes have been found in Wales, where flint of the size and quality necessary for such implements apparently does not naturally occur. The hypothesis of a natural means of transport for the raw materials can be eliminated, and these facts therefore become important because of their bearing upon contemporary movement, whether of trade or settlement.

A moment's thought of the large number of greenstone and other

[5] *Congress Proceedings*, pp. 137–8.

axes to be found in public and private collections all over the country will be sufficient to give some idea of the vast amount of potential evidence waiting to be tapped by the worker competent to examine it. But the problem is essentially one for the petrologist, and when, as in due course it must, the work is tackled on scientific lines, the only satisfactory method of approach can be a geological one.

Up to the present the bulk of the identifications that have been made have been based upon macroscopic examination of the surface of the implement, but there can be little hope of any real advance until a more certain method is more generally adopted. Exposure to a variety of influences brings about weathering of the surface of the stone, and produces features which may be quite different from those of the unchanged rock at the core of the specimen. To expect accurate determinations from such evidence is to place an unfair burden on the geologist on whom the archaeologist must depend ; but in any case the value of the result thus obtained must clearly be open to very serious question : it is generally uncertain, and may very frequently be wrong. The only sound basis is the provision of a fresh surface of the stone, unaffected by weathering and other factors ; and this can only be obtained by the deliberate cutting of the specimen. The result would be to replace guesswork by certainty (obviously the only possible basis for a subject which professes scientific principles) ; and the necessary vandalism could in point of fact be perpetrated with comparatively little damage to the object itself. The principle by which destruction of some part of the evidence is recognized as inevitable by the older sciences can readily be adapted to meet the somewhat specialized need of archaeology, in which every specimen is in a sense unique and irreplaceable.

I make no claim to originality of any sort in setting forth the above views. Indeed, I believe them to be widely held, at least amongst the most advanced workers of today, by some of whom they have been put into practice. But while what may be (somewhat sweepingly) called the ' collector mentality ' seems still to be sufficiently strong among us to justify this re-statement, such a change need not be inconsistent with the reverential treatment which all museum specimens should receive, if it is carried out carefully and with understanding, as has been done with Mr Alexander Keiller's collection of greenstone axes. The evidence thus obtained will be of value ; the alternative, evidence based on false or at least uncertain premises, becomes on the face of it pure retrogression.

If I have appeared to stress unduly the problem of the relation of archaeology to the established sciences, and of our technique to the principles upon which they have been so successfully built, it is because I believe that only along these lines can permanent advance be made. The longer such changes as are necessary are postponed, the greater will be the loss to science ; nor can we claim full stature for our subject as a science until (no doubt among other things) our technique in the collecting and examination of evidence has been placed upon a sound objective basis.

We cannot, however, leave this aspect of the subject without considering another matter to which attention is drawn by another of the books with which this article is concerned.

Concentration upon distributional work in the past few years has shown that close relationship existed between the movements and settlement of man on the one hand and the various factors that go to make up environment on the other. The working out of successive distributions has emphasized this relationship, and has been sufficient to show that on general grounds the argument holds good : the history of human affairs since the Pleistocene period has been one of gradual expansion from areas of primary settlement (which were naturally open regions) to other less-favoured parts which could only be settled as civilization achieved the necessary organization and means for the clearance of natural obstacles such as forest and swamp.[6]

But the brilliance with which the material has been handled must not be allowed to blind us to the dangers which attend too facile a use of these arguments. In many areas variations present themselves, making it dangerous, if not impossible, to apply the general thesis except in modified form. And while more can still be learned from study of these problems in their widest application, it is none the less true that the time is coming when we shall need more detailed local studies, in order to examine more fully these variations, and to see to what extent modification of the general position is desirable.

In saying this, I am, of course, aware that a number of local surveys already exist. The County Archaeologies published by Messrs. Methuen are very helpful in a number of ways as far as they go ; so too the volumes of the Victoria County History. Mrs Cunnington's *Archaeology of Wiltshire* is a local study which provides within its covers a broad picture of the pre- and early history of one area set

[6] *Congress Handbook*, pp. 17–19.

against the background of the archaeology of southern Britain as a whole. Such a book, written as it is by the acknowledged authority, has a definite value, even for the expert, but its purpose nevertheless is essentially popular: the background is lightly and conservatively sketched; the descriptive matter follows a somewhat unusual scheme which is in essence topographical and drawn on the broadest lines. It is no disparagement of this and similar studies to say that they do not meet the rather specialized need which soon must make itself felt.

Here again I make no claim to any particular originality when I suggest that what seems to be called for is a series of field-surveys, not necessarily by counties, having as their ultimate aim the preparation of distribution-maps on which the remains of early man may be studied against the reconstructed natural environment of a given area. Again, too, I am aware that maps on these lines have already been prepared for certain areas. But the point which I should like to urge, and which I feel cannot be too strongly urged at the present time, has to do with the attack upon the problem of environment. In the preparation of the base map it will not be sufficient to accept generalizations, nor even to build up a reconstruction of the supposed natural conditions upon the basis of a geological map, whatever its scale. It will be necessary to study on the ground variations in soil-character, vegetation, and other factors bearing on environment; in other words we must re-affirm the principle that we can only obtain and use geological (including under that term for convenience the various aspects of soil, drainage and so on) and botanical evidence by following geological and botanical methods. The problem of the application of those methods is one which cannot be gone into here. Obviously the work could best be carried out by the pedologist and botanist; just as obviously the archaeologist will need their expert cooperation and advice if he sets out to do it himself. The special nature of the task may indeed demand a special technique in which the necessary elements will be borrowed and adapted—and we may perhaps hazard the prophecy that the time will come when a rather specialized grounding in the natural sciences will be regarded as an essential part of the training of the field archaeologist. There will perhaps be some to argue that in adopting such a course archaeology goes unnecessarily beyond its sphere: for them withdrawal from a field which promises valuable results would seem to be the only logical step. But if man's relation to his environment is to be regarded as an integral part of archaeological work, as present tendencies increasingly suggest, then the time is ripe for setting this

side of the subject upon a similar footing to that upon which our technique of excavation has been established with such satisfactory results. The essential facts are that we can no longer work on anything but scientifically-established data, and that argument from the general to the particular, or even from one particular to another, is an even more dangerous process than usual when the subject is the wide variety of natural conditions of which these islands are composed.

Only less important than the question of the cooperation of archaeology and the national sciences is the question of future organization. Growing realization of the bulk and complexity of the work now being produced over a wide field has awakened the need for close cooperation between workers. The result has been the appearance in recent years of a series of summaries of new discoveries and current work, which have now become a feature of several periodicals. Students as a whole are thus kept in touch with the latest events, frequently before publication in any detail is possible. This type of organization, however, may well be left to take care of itself; the close contacts that nowadays exist between individual students and societies are sufficient guarantee that ideas and discoveries will circulate freely, even if the necessary public-spirited workers are not available to put them into print.

The second type of organization sets out to attack a problem which can only be solved by the cooperation of a number of workers united under a closely organized scheme.

Obviously the best instance of this—the best if only because it is furthest away in time, and its results can therefore be the more accurately computed—is the Earthworks Committee which was set up by the Congress of Archaeological Societies in 1901. This Committee published in due course a scheme for the direction of workers on earthworks, with a series of types, recommendations as to scales, features to be noted, and so on. With the details of that scheme we are not concerned here. The main fact to be noted is that while the Committee produced no official survey of the type foreshadowed by its proposals, it nevertheless provided the basis for a great deal of good work. Directly or indirectly, such pioneer workers as Hadrian Allcroft, Williams-Freeman and Heywood Sumner derived inspiration from it, and its classification of sites was adopted by the Victoria County History. The result has been a large body of material of very great value to the student of earthwork, which could hardly have been assembled by any single individual. The fact that the material does not—as yet—cover the whole country is obviously beside the point: in this incidental events

have played their part. The work still goes on, and the influence of the Earthworks Committee is still strong.

More recently two other schemes have been advanced for a similar purpose, both under the control of a Committee set up by the British Association.

The first of these was established in 1913 as a Committee ' to report on the Distribution of Bronze Implements ',[7] and rightly thought its first duty to be the preparation of an index of all the known implements which should form the basis for further work. The British Association card catalogue, which is well known to all students of prehistory, was the result of this Committee's labours, with the aid of voluntary workers under the general direction of Mr Harold Peake. Now regarded as complete for this country, the catalogue has been placed in the care of the Department of British and Medieval Antiquities of the British Museum, and the hope is expressed that future discoveries will be brought to the notice of the Museum authorities, so that the specimens may be drawn and incorporated in the catalogue. To this arrangement I refer again below.

The second Committee was established in 1919 ' to report on the Classification and Distribution of Rude Stone Monuments '.[8] Here also the first step was to be the preparation of a classified index of megaliths, the field work being carried out under the direction of the central Committee. Here unfortunately the results have not been so successful, and the difficulties of coordination and direction which appear in a minor degree to have beset the Bronze Implements Committee in its work seem to have operated on an even more intensive scale in the case of the Megaliths Committee.

This leads me to suggest that archaeology in this country has reached the stage when the collecting of evidence sufficiently detailed to be of value on such important and complex subjects as megaliths has grown beyond the scope of voluntary committees with part-time officers, however distinquished and scholarly those committees and their officers may be. That the actual collecting of the evidence should fall mainly to the lot of local workers—where they exist with the necessary qualifications—is natural, and, indeed, inevitable, if completeness in the record is thought to be desirable; but the work of organization and direction, the coordination of the material when collected, should be the work of one or more full-time experts with

[7] See the *Congress Proceedings*, p. 145. [8] *ibid.*, p. 119.

adequate clerical assistance. At the present time no organization capable of dealing with such a situation exists.

Here we may return for a moment to the Bronze Implements catalogue, which, we have already noted, has been handed over to the British Museum, accompanied by a pious hope that future discoveries will be reported and added as necessary.

One of the first essentials of such a catalogue is that it should, within reasonable limits, be kept up to date. The greater the lapse of time between additions, the harder the task will become, and the greater will be the decline in value of the catalogue. Once again it appears that no adequate permanent machinery exists for such a purpose. No one, least of all the present writer, will question the willingness of the British Museum officials at all times to place their resources at the disposal of the research-worker. On grounds of general accessibility no difficulty would arise. But the mere fact that we have become accustomed to treating the British Museum as the unofficial centre of archaeological studies can be no excuse for perpetuating an arrangement which, whatever the general benefits, places an undue burden upon a few individuals. We have no right to expect that the Museum staff will be able to undertake the work of maintaining the catalogue as it ought to be maintained, while the curators of provincial museums and others upon whom is to devolve the task of supplying the information are already for the most part fully occupied in their routine duties of preservation and education. It is too much to hope, therefore (in the absence of a central driving force) that the record will keep pace with discoveries. In this mood of pessimism I can only conclude that the catalogue must in course of time lose all practical value as the complete record which it is intended to be, unless means can be found of establishing an efficient liaison-system based upon something more reliable than the present arrangement.

The obvious conclusion is that our subject needs, or must soon need, some kind of central organization to act (among other things) as a repository of records of the raw materials which students use. The growing complexity of archaeological work, and the difficulties attendant upon it are carrying us beyond the days of voluntary, and frequently unwieldy, committees as our only means of attacking problems of any size for which whole-time experts are necessary. The gap can best be filled by the Institute of Archaeology which has recently been formed, and to re-state the need for that Institute here is merely to repeat what has already been said with greater authority by others.

The publication of material assembled in this way is an uncertain matter which depends upon so many factors ; but the fact that the material would be available in one form or another in one centre would in itself be of outstanding importance. A moment's thought will enable one to visualize some of the possibilities. Mr Leeds's monograph suggests one. A fully documented corpus of all the known examples of Celtic art, whether published or merely in the form of an index, would be of untold value to the student, whether of human history or of art-forms. A central Institute (working, it may be, in association with a Committee of the acknowledged authorities, but still exercising unfettered control) would seem to provide the only machinery for carrying out such work profitably and in good time. This, I hasten to add, must not be understood to imply that the work is necessarily to be carried out by members of the Institute themselves. The dangers of excessive centralization are almost too well recognized in every branch of life in this country ; but no less for the sake of the museum- rather than for the research-worker—though they are frequently one and the same—we must distinguish between the preserving and educational functions of the museum as such, and the training, research and directional functions of the Institute. The two must obviously maintain close cooperation (the British Museum will be no less indispensable to any research organization, because of its collections): neither is complete without the other. Until the Institute is equipped to meet the needs outlined above, and established as a working force, a vital need of archaeology in this country awaits fulfilment.

The Writing of Njoya

by O. G. S. Crawford*

EVER in the background of anthropology there lurk certain ghosts, doomed to haunt us until the doubts they stand for shall have been laid at rest. They hover around in couples, mutually opposed and irreconcilable. There is the ghost of Diffusion and his sprightly spouse, Independent Invention ; there are the Race-and-Culture Twins, and their half-brothers Innate Capacity and Cultural Achievement. (There are also a few others whose time of rest is near at hand). So long as we keep on the move, we need not fear these ghosts ; but if we stop, still more if we lie down and go to sleep, they attack us with darts in the form of query-marks, some of them, alas, dipped in the poison of acrimony, or barbed with political animosity.

This haunted background is illuminated by the remarkable achievements, during the first decades of this century, of Sultan Njoya, ruler of the Bamoun communities of the Cameroons. Perhaps his most brilliant feat was to invent an ideographic script for the Bamoun language; and then, not content with this, to convert it into an alphabetic one, and to use it for the promulgation of a code of laws and a religious or philosophical system. He died in 1932, but his alphabet is still in use.

Three other original systems of writing are known on the west coast of Africa and in the adjacent regions. (By ' original ' is meant systems that consist of signs invented by the natives themselves and coordinated to represent the sounds of their language). The first was discovered in 1848 by Commodore Forbes of the British Navy ; his results were described and published a few months later by a missionary, Koelle. Since then several writers have become interested in this

* The first part of this article, after the two opening paragraphs, is a free translation of the chapter on Bamoun Writing, by M. Henri Labouret, published in the journal *Togo-Cameroun* (11, rue Tronchet, Paris), April-July 1935, pp. 127–133. I wish here to acknowledge my indebtedness to M. Labouret for allowing me to publish this translation and for authorizing the form in which it appears; and to the Editor of *Togo-Cameroun* for supplying the material for the illustrations. The concluding remarks (p. 439 to the end) are my own.

script, which is probably ancient and remains in use amongst the Vai or Vey, a people speaking a Mandingo dialect and living on Liberian territory, between the river Gallinhas and Monrovia.

Another system was reported in 1905 by District-Commissioner J. T. Maxwell amongst the Efik of Calabar province. Though it has been much studied, it is not possible to state definitely that it is a form of writing. Some regard it as simply a large collection of signs of different values used by the societies corresponding to age-classes of the young people.

On the other hand there can be no doubt that an original system was invented in the Cameroons by the personal initiative of Njoya, Sultan of Bamoun, in 1900. The existence of this writing was revealed to the world in 1907 by the German missionary Goehring, who published a very interesting note about it.[1] Since then several writers have studied this very remarkable creation. The most complete and the clearest analysis is that of Maurice Delafosse.[2] Nevertheless, as regards the history of the subject, several of his statements are contested by the present Sultan and members of his court.

To begin with it may be said that the occupation of Foumban by the Germans in 1899 could have had nothing to do with the Sultan's invention of signs that should be incomprehensible to Europeans as well as to the natives knowing Arabic writing. The Bamoun were then already Musulmans ; many of them could read the Koran, and used Arabic in business correspondence with the merchants recently arrived from the north. But we must define our terms, when we speak of the German ' occupation '. The Germans could hardly have caused any inconvenience even to the inhabitants of Foumban, for their administrative station was situated at Bamenda, more than 50 miles distant, across a range of mountains. The Sultan was represented there by clerks who translated his reports to the Resident. It was not until 1910 that an agricultural station was created at Nkutie ; then in 1913 the district of Bamenda was transferred by Captain Adamest to Matunke near Nkutie. In actual fact the Germans were never in the immediate neighbourhood of Njoya and did not attempt to molest the Sultan.

But the sovereign ruler of the Bamoun was a man gifted with great intelligence, backed by a lively imagination. He fully realized the importance that writing might have in the development of his people

[1] ' Der Koenig von Bamun und seine Schrift'. *Der evangelische Heidenbote* (Basel), vol. LXXX, no. 6.

[2] *Revue d'Ethnographie et des Traditions populaires*, 1922, pp. 11–36.

and he strove to bring about what he regarded as an urgent improvement of their culture. Later, thinking that the local religion too needed reforming, he composed a most curious syllabus of philosophy, which was influenced by the doctrines of Islam and Christianity and united to them by animistic ideas.[3]

Over a long period he concentrated all his faculties on the task of creating the signs he wished for. One night he had a dream in which there was revealed to him a complicated figure corresponding to the

Bamoun word	Meaning	Sign of 1900 (Clapot)	Sign of 1907 (Goehring)	
Pè	*Kola-nut*			
Fom	*King*		1907	1916
Ntab	*Hut*			
Nyad	*Ox*			

Fig. 1. BAMOUN IDEOGRAPHIC SCRIPT

letter ' pouen ' : hand. He dreamt that he wrote this letter on a slate and that after washing the surface of the slate clean again, he drank the water. Thus he was performing a magic rite well known to the Musulmans and one which he believed would assist his investigations. With the help of several court officials he drew up a preliminary list of signs to be employed. These, most fortunately collected by the missionary Goehring, and later by the French Lieutenant Clapot, have been partially preserved ; they were all ideographic or symbolic, each

[3] See note at end.

representing in fact a word, without regard to the number of syllables in it. But as Delafosse says, the roots of the Bamoun language are almost all monosyllabic, so that they can represent, in this simplified form, the majority of the ideas in circulation and of the objects in daily use. Thus was obtained about a thousand different signs whose number and complexity made writing difficult to set down and also to read.

Some of the signs of the first period which lasted up to 1909 are given on page 437.

From 1910 onwards Sultan Njoya strove to simplify his system, which had proved very difficult to use. He came gradually to alter the signs from an ideographic to a phonetic value, which remained constant and corresponded to the sound of a syllable. He achieved a new, syllabic, stage, preceding that of the alphabet by several years. Thus Njoya's invention passed through each of the three stages common to all the principal scripts of history, as the table opposite (FIG. 2) shows.

The literary men of Bamoun hold that their writing has changed four times since the initial stage. They have, in fact, supplied the writer with a first table comprising 419 signs, which may be assigned to about the year 1907, then another of 286 signs, corresponding probably to 1913, then a table of 204 signs in use about 1915, and lastly two tables of 70 signs each, the second one however being much simplified. These last have been used since 1918, and the last (simplified) edition is still in use in the palace of Foumban.

During his reign Njoya encouraged the spread of this writing with all his power. It was taught in the schools, and the leading men and officials used it in their correspondence with him. The Sultan had created government departments to have charge of the records and of the administration of justice ; these were made responsible for all documents relating to accounting and government. There can still be seen today, in one of the rooms of the palace at Foumban, a library containing hundreds of laws, decisions, reports of meetings, kept in embroidered skin bags which hang on the walls.

Besides this Sultan Njoya wrote a history of his people and dynasty ; composed the philosophy already mentioned ; and recorded a large number of legends and fables.

These documents run the risk of being lost. With them will disappear all traces of an extraordinary invention, developed and improved by its author over a period of twenty years. For this reason we must all be grateful to the present Sultan, Seidou Njimolou Njoya, for having presented some of these archives to the National Museums of France.

It was suggested, at the beginning of this article, that Sultan Njoya's achievements had an interest for anthropologists. No one would deny this ; but where exactly does the interest lie ?

It lies first in the innate intelligence of the Bamoun, a ' primitive ' or ' backward ' community. (I here use the word ' community ' somewhat loosely, without regard to the size of the group so described, to avoid using the word ' race '). Many will be surprised that coloured men should have achieved this. They are unconsciously

Actual value	Word	Meaning	1907	1911	1916	1918
F, fa, 8	*Fama*	*Eight*				
F, fè	*Fè*	*Burn & work*				
F, fo	*Fom*	*King*				
F, fou	*Fou*	*Measure*				
G, ga	*Ngè*	*(Chose-faite)*				
G, go, 10	*Ngom*	*Ten*				

Fig. 2. BAMOUN SYLLABIC SCRIPT

assuming that it is possible to associate physical and mental attributes and to generalize about them. But it is not permissible to do so. There is no evidence that the mind of the black man is naturally inferior to the mind of a white man (even of a ' Nordic ' !), and there is a mass of evidence, including Njoya himself, that points the other way.

The fact that the culture of African communities differs, to use a non-committal word, in so many respects from that of European communities may be due to a number of differentiating factors—

geographical, climatic, historical, economic, social and such like. These same factors, with others, may also have operated in the past so as to favour the survival of certain physical types of humanity. During the past certain factors of environment have been constantly in operation, factors of a geographical nature for the most part. From out of the interaction between all these factors there has emerged the existing group of human beings in any given region, together with its social organization. The physical make-up of those human being is, of course, a factor in the whole complex process ; it is no more and no less.

Under certain favourable, but imperfectly known, conditions, the culture of a given community may suddenly change. (To use question-begging terms, it may progress forwards or backwards). The adoption of writing by an illiterate community has many parallels both in our own early history and today in the U.S.S.R. The adoption by a community of an entirely new system of writing, invented by one of themselves, merely goes to prove the absurdity of assuming that any such thing as ' racial inferiority ' exists. It is fortunate for humanity that this is so ; for otherwise large groups of it would be doomed to remain ' inferior '. As it is, the evidence of anthropology and history (including our own) emphatically rejects the idea of ' racial inferiority '.

The general phenomenon of what anthropologists call ' culture-borrowing ' is familiar, and has of course been long known, though it is not studied by them as intensively as it should be, in view of its practical importance. It is when we come to examine any modern instance closely that it becomes most instructive ; for we are seldom able to subject historical examples to this treatment. In most modern instances of culture-borrowing—such as the adoption of industrial machinery by Japan and the U.S.S.R.—there has been a transference of men and models ; and the resulting installations were, at first at any rate, exact replicas. There is, however, no evidence of any such imitation in the case of the Bamoun ; and it is this fact that differentiates their achievement and adds interest to it. For here we do seem to have got an instance of the borrowing of an *idea*—that of writing in the abstract—which was immediately adapted to the local conditions. Njoya did not take over any ready-made system of writing, but merely the *idea* of writing ; he evolved his own system. No doubt he knew of and had often seen examples of writing ; we are told that an Arabic script was actually in use in his kingdom ; and doubtless European books and newspapers were not entirely unknown. But these systems had little if any direct influence. He began not with literal signs but

PORTRAIT OF A SULTAN (A BAMOUN PAINTING) — *Ph. Marion* Laboureur *(by courtesy of the Editor of "Togo Cameroun")*

PLATE II

SULTAN NJOYA ON HIS THRONE

Ph. A. Chaume (*by courtesy of the Editor of 'Togo-Cameroun'*)

with ideographs,[4] which elsewhere have been obsolete for more than three millennia,[5] except in the Far East.

May not the great inventions of humanity have been diffused in just this way ? May not writing itself have passed thus from the country where it was invented (whether Mesopotamia or elsewhere) to other countries ? A few examples, such as seals or clay tablets, would pass out along some trade-route ; eventually one of them would catch the eye of some unknown prehistoric genius like Njoya ; he would at once foresee the possibilities, and would evolve a local form of writing. There might be an occasional borrowing or direct imitation of signs, though it is not necessary to assume this. Such a hypothesis is not at variance with what we know of the early scripts of Sumeria and the Indus civilization. For there seems to be enough resemblance between the two scripts to establish some community ; and trade connexions between the two regions have been proved. Granted such connexions between the civilizations of the ancient world—and except possibly for the Far East they are all proven—we may infer that the six great scripts of antiquity (those of Mesopotamia, India, China, Egypt, Anatolia and Crete) originated in the way suggested.

So too the Cult of the Dead may have spread as a religious idea. It is quite unnecessary to assume the intermediacy of long-distance carriers of the idea. An original community of custom and cult is all that need be assumed ; each region would then develop its own forms. The house of the dead would imitate the houses of the living ; in some regions it would take the form of a cave, natural or artificial ; in others the cave would come above ground and become a burial-chamber built of big or small stones ; in stoneless country it might be a wooden structure ; and that, in fact, is just what we do find.[6]

But to return to Njoya. The paramount interest of his achievement lies in the fact that it might appear as an independent invention, if we only knew of it from historical, or even more from archaeological, evidence. What possible parallels could some future archaeologist

[4] An ideograph has been defined as ' a drawing representing not a sound, nor even a word, but an idea ' ; the oldest known signs were not ideographs but pictographs.

[5] The oldest alphabetic signs are those of Sinai and Syria, which belong to the middle of the second millennium B.C. or before.

[6] I have always held this view, though I have never developed it. (See for instance my remarks in Ordnance Survey Professional Paper No. 6, ' Long Barrows of theCotswolds ', 1922, p. 5). I differ from orthodox diffusionists in my views about the country of origin and in the method of diffusion, as well as from many of their subsidiary theories.—O.G.S.C.

adduce if he were to dig up one of Njoya's documents ? At the most there might be a few resemblances that could better be accounted for by convergence : for the only parallel scripts would be impossibly remote from the Cameroons both in time and space. It would indeed be well worth examining his script to see whether any such convergencies with other scripts do in fact exist. For here at any rate we should know for certain that they *were* convergencies, not borrowings. Such an enquiry would not be of merely formal interest : for it has recently been claimed, on the strength of resemblances between the signs, that the script of Easter Island is derived from the Indus script. Such a suggestion seems quite fantastic, and would hardly be seriously considered, had it not been supported by a distinguished ethnographer. Yet who, with the example of Njoya before him, would not prefer to believe that some long-forgotten Polynesian genius had seen writing and evolved a system of his own ?

There is one last point of interest—the rapid evolution of Njoya's script. In a bare twenty years it passed from ideographs to letters. We may doubt whether such a rate of development would have been possible, had not alphabetic signs been already known to the author. It is certain that the actual invention of the alphabet—probably a unique invention—did not occur until at least 1500 years after the invention of ideographs. Njoya however was merely recapitulating the experience of the race, and that perhaps may partly account for his speed.

NOTE. The following is an attempt to translate an extract from one of Njoya's writings :—' Persevere, pursue, follow your predecessors in an effort to reach them. This is the book of the Sultan Njoya of Bamoun, in which he has written the principles of the word of God, selected from the Koran and the Bible. He has brought together everything in this book for fear of God. He who shall read this book and carry out its principles shall enter into the Kingdom of God. He shall overcome sin, and the Musulman law shall be easy for him to observe. It is not right to proclaim the deeds of the prophets before the people. When the people hear the words of the prophets, they seek to do as they do, to imitate them, without giving heed to their own conduct, without seeking to pray that they may be purified of their sin. It is necessary always to seek the means of salvation, and not to imitate the prophets '.

TYPICAL GROUP OF CELTIC FIELDS ON WINDOVER HILL, NEAR EASTBOURNE

Reprinted from ANTIQUITY, volume I, p. 272, plate II

facing p. 443

The Celtic Field-System in South Britain:

a survey of the Brighton District

By G. A. Holleyman

During the past ten years a subject which had hitherto been obscure and of doubtful importance has, by the patient research of a few indefatigable pioneers, come to take a position of first importance among archaeological studies. The history of agriculture, its origins in the fertile crescent, and its subsequent development and spread into Europe is now well-known.

From the neolithic period onwards evidence of corn-growing is not wanting. Grain-rubbers have been found in neolithic flint mines and dwelling sites ; charred grain has been recovered from the neolithic camp at Hembury in Devon, as well as in Scotland, and, as Dr Cecil Curwen has so ably demonstrated,[1] irregular corn plots may still be seen associated with neolithic and Early Bronze Age hut-circles on our western moorlands. With the arrival of the first Celtic immigrants during the first half of the first millennium B.C. a more prolific period of corn-growing set in which continued until the end of the Roman occupation. The small squarish fields bounded by lynchets which cover the chalk uplands of our Lowland Zone are now familiar to all. These are recognized as belonging to what is called the Celtic Field-system and many be associated with settlements dating from the Late Bronze Age (1000–500 B.C.) to the end of the Roman period (about A.D. 400). Indeed the Celtic system of agriculture was practised for something like 1500 years, and over a large area, so that it is not surprising that evidence of earlier ploughing is scarce.

Although people are now no longer sceptical about the origin of lynchets, and the Celtic and English Open Field systems with their respective differences are generally accepted, little attention has been

[1] E. C. Curwen, ' Prehistoric Agriculture in Britain ', Antiquity, 1927, I, 261–289 ; E. C. Curwen, ' Air-Photography and Economic History ', (Econ. Hist. Soc., 1929) ; *Report of the 39th Congress of Arch. Societies*, 1931, 30–35.

paid to the distribution of the former and its association with contemporary settlement sites. Mr O. G. S. Crawford and Mr Alexander Keiller with the aid of air photographs have surveyed numerous lynchet-groups in Wessex with admirable results,[2] and now the Ordnance Survey is publishing a series of maps of Salisbury Plain[3] showing the Celtic earthworks and lynchet-groups as far as they have been recoverable from air observation. In Sussex a small number of individual groups associated with settlements have been surveyed in detail, but beyond these few efforts little has been done.

With this in mind the writer decided to study the Celtic lynchet-groups in the neighbourhood of Brighton, between the rivers Ouse and Adur, with the object of ascertaining (1) their present and original distribution, (2) their area, relative and absolute, (3) their association with settlement sites belonging to the period under review, and (4) the forms of their contemporary field-ways. This area is eminently suitable for this type of survey for the following reasons ; (1) it is a segment of the Sussex South Downs, bounded on the east and west by the valleys of the rivers Ouse and Adur, on the north by the Weald and on the south by the English Channel ; it has therefore always had well-defined boundaries ; (2) from the Late Bronze Age until the coming of the Saxons there has been a succession of settlements on the whole of the South Downs ; (3) the Downs consist of chalk which retains evidences of human disturbance for indefinite periods of time ; (4) a relatively small amount of downland has been under the plough in recent times, which is the principal reason why so much surface evidence remains.

Distribution

The main ridge of the Downs runs from east to west—on the north descending steeply to the Weald, and on the south sloping gently away in a series of broad, undulating spurs. The average height of these hills is about 500 ft., but the main ridge averages about 650 ft. and at Ditchling Beacon rises to 813 ft. Such uplands as these, situated in the extreme south of our island, are excellently suited to the production of corn, so it is not surprising to find distinct groups of lynchets distributed fairly evenly over the whole area. The majority of them form an almost continuous belt two to three miles wide commencing a

[2] O. G. S. Crawford, *Air Survey and Archaeology*, 2nd edition, 1928 ; O. G. S. Crawford and A. Keiller, *Wessex from the Air*, 1928.

[3] *Celtic Earthworks of Salisbury Plain* ; Old Sarum Sheet. Ordnance Survey, 1934.

little to the northeast of Shoreham and ending at Lewes. It will be seen that these groups with one exception occupy the hills and slopes sheltered from the north by the main ridge, while the latter has for the most part been left uncultivated. A smaller, less complete belt runs across the Downs separated from the first group by the Brighton to Lewes valley. Here again they are sheltered from the north by the secondary escarpment above Kingston by Lewes.

The sizes and shapes of the groups are as arbitrary as those of the hills on which they are found. Some are two miles long covering a north to south ridge and its lateral spurs generally on one side only. Smaller ones may cover single or twin spurs. A notable feature in the larger groups is the presence of lynchets in the small valleys between the spurs, usually above the 300 ft. contour line. As these often run transversely across the valleys from side to side it is clear that the latter were impassable in times of corn-growing.

Considering the large area under cultivation in Romano-British times it is surprising to find any gaps in the continuity of the groups at all, especially as some spurs devoid of lynchets appear pre-eminently suitable for use as arable. These blank spaces may be accounted for by one or more of the following reasons : (1) That the ground was never under the plough in Celtic times ; when the surface of the down-land is completely unbroken by any irregularity caused by either ancient, medieval or modern ploughing we may assume this to be the case. This land would have been set aside for use as pasturage. (2) That medieval ploughing has obliterated the earlier Celtic lynchets. Two groups of well-defined medieval strip-lynchets exist in the Brighton area, one on Newtimber Hill and the other on Lodge Hill near Piddinghoe ; there is a suggestion that the former group may overlie a series of Celtic fields. (3) That modern ploughing has effaced all traces of earlier agricultural practice. This is certainly the cause of barrenness in certain areas, especially near towns and present-day villages. It can be seen that for a radius of one mile round Brighton there is barely the trace of a Celtic lynchet. This paucity is also apparent along the low spurs rising from the coastal plain between Shoreham and Brighton and along the coast between Brighton and Newhaven. In this zone modern tillage has been much more intensive than farther inland, with the result that all vestiges of earlier cultivation have disappeared. Present-day ploughing is rapidly encroaching on several of the groups and several of the larger ones have been split and divided. An attempt has been made to nucleate these isolated fragments and the original

boundaries have been shown wherever it has been possible to trace them with a fair degree of certainty. (4) That extensive building has covered areas where Celtic lynchets could once be seen. Brighton itself is guilty of this sacrilege, for its ever-widening boundaries have recently encroached on two of the marked groups, *i.e.* Falmer Hill and Tegdown Hill. There is little doubt that these two are by no means the first to suffer and that complete areas have been engulfed within the past 150 years, for Brighton is built on low hills of the type that would lend themselves to agricultural industry.

Area

The stretch of Downland selected for this survey covers roughly 65 square miles excluding the river valleys and coastal plain. Of this total at least 23 per cent., or 14.5 square miles, were under cultivation in Celtic times, although the actual area of lynchets extant is 11.45 square miles or 18 per cent. of the whole.

The Settlements

Having found a lynchet-group and ascertained its boundaries the next problem which presents itself to the field worker is : where was the settlement, or settlements, in which the farmers lived who ploughed the fields, and to which period did they belong ? There is no definite rule concerning the positions of villages and hamlets except that the majority favour summits (not on the main ridge) and southern slopes. Variations occur, for a small late 4th-century (A.D.) village[4] was situated on the northeast face of Wolstonbury Hill, and a Romano-British settlement flourished on a northern spur of Falmer Hill. The actual site may be easy or difficult to locate according to whether it has been ploughed over or not. If it has not been obliterated a series of shallow circular depressions marking the positions of pits or huts can generally be made out together with various mounds, banks and other irregularities. Over this disturbed ground burrowing animals have in all probability turned up a quantity of calcined flint and sandstone, potsherds and animal bone. Examples of such well-marked sites, all belonging to the Romano-British period, occur on Thundersbarrow Hill, Highdole Hill near Telscombe, and Buckland Bank.

[4] *Sussex Archaeological Collections*, 1935, LXXVI, 35–45.

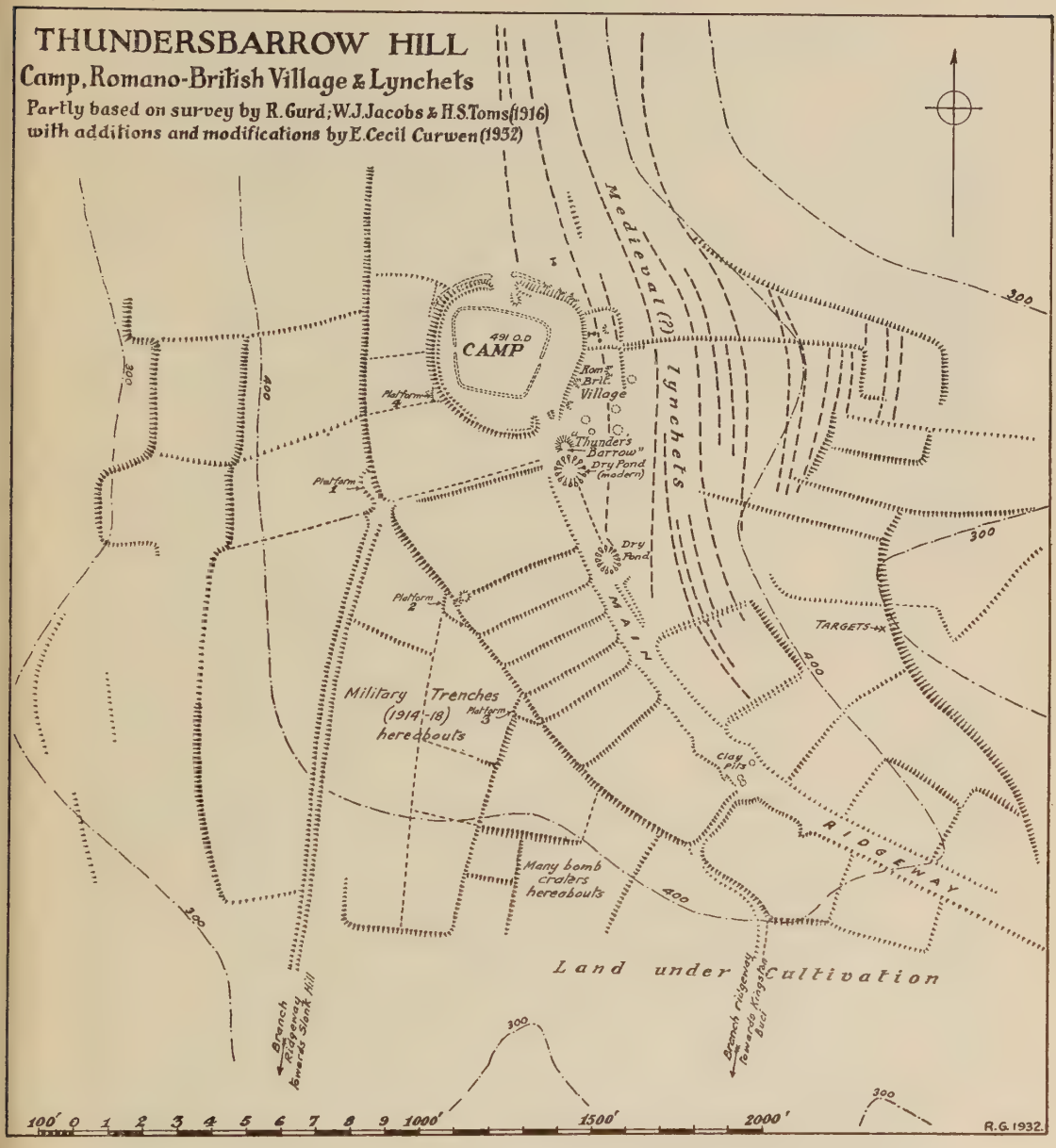

THUNDERSBARROW HILL
Camp, Romano-British Village & Lynchets
Partly based on survey by R. Gurd; W.J. Jacobs & H.S. Toms (1916)
with additions and modifications by E. Cecil Curwen (1932)
Medieval (?) lynchets
491 O.D
CAMP
Rom. Brit. Village
Thunder's Barrow
Dry Pond (modern)
Dry Pond
Platform 1
Platform 2
Platform 3
Platform 4
MAIN
TARGETS
Military Trenches (1914-18) hereabouts
Many bomb craters hereabouts
clay pits
RIDGEWAY
Land under Cultivation
Branch Ridgeway towards Slonk Hill
Branch Ridgeway towards Knighton Bird
300
400
100' 0 1 2 3 4 5 6 7 8 9 1000' 1500' 2000'
R.G. 1932.

FIG. 1

On Thundersbarrow Hill[5] (FIG. 1) the village was situated on the eastern fall of the summit and encroached on to the almost obliterated rampart of a small Early Iron Age camp. The surface-appearance is merely that of a series of saucer-like depressions dotted indiscriminately over an area roughly 200 yards long by 100 yards wide. Little surface pottery can be found. A large main ridgeway leads away to the southeast bounded on either side by fields. A double-lynchet road runs southwards down a lateral spur between a network of lynchets. The whole lay-out gives the impression of a highly organized agricultural settlement.

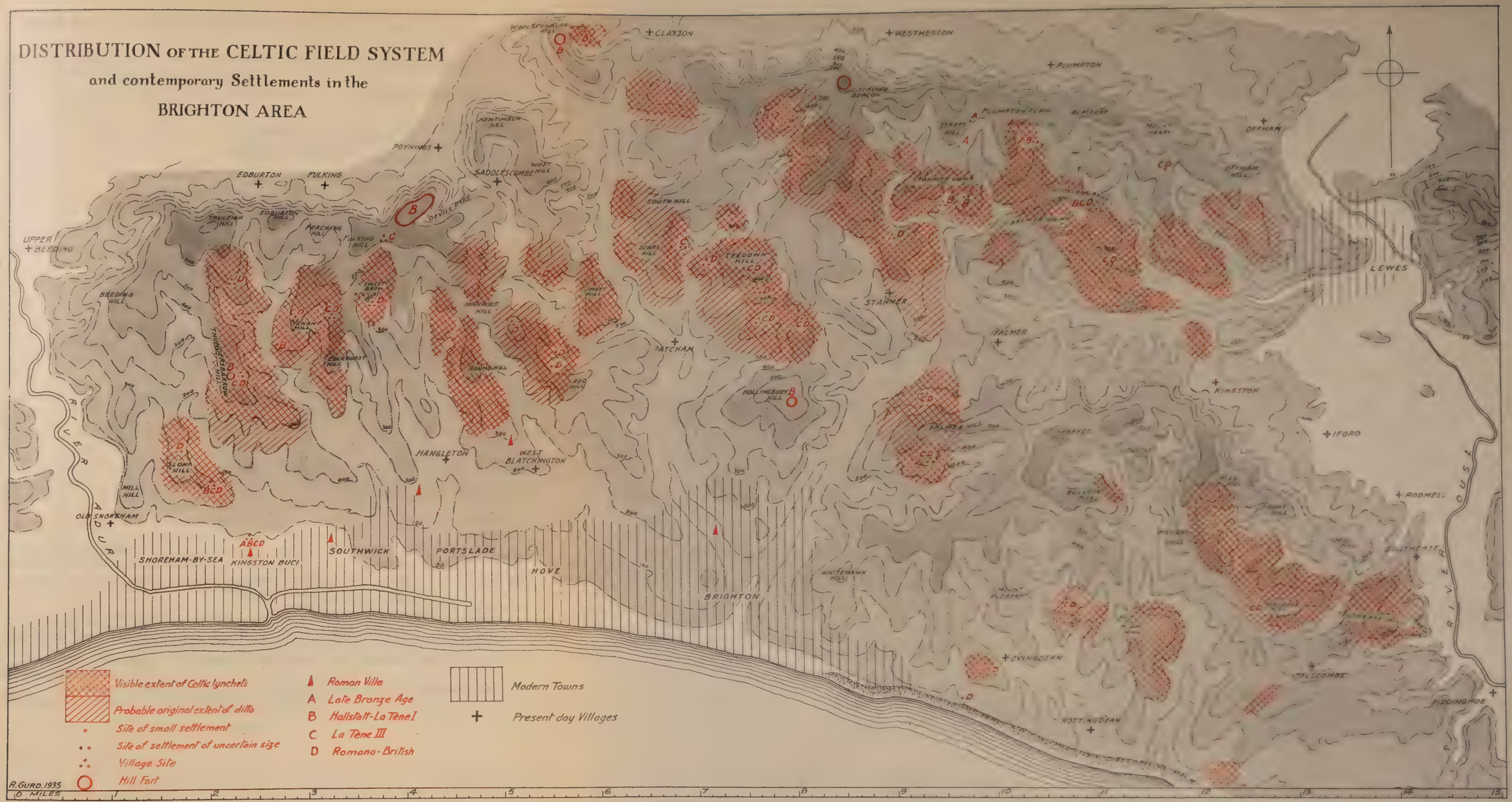
Highdole Hill (FIG. 2) site exhibits similar features. Roughly twenty circular pits and depressions lie close together on the summit in an area strewn with La Tène III–Romano-British sherds. There is an appearance of order in the arrangement of the huts, which seem to have been erected on either side of a roadway running through the village from northeast to southwest. A double-lynchet road runs away to the northeast and a second, rather mutilated example, enters from the southwest. The settlement is in line with fragments of a well-defined bivallate road a few hundred feet to the north, which possibly connects with another known village in that direction.

The Buckland Bank site[6] (FIG. 3) is the most complete of the three. The position of the village is marked as in the previous ones by shallow depressions and a general unevenness of the surface. Sherds, Roman tiles and calcined flints may be found within this disturbed area. A fine bivallate road runs from the northwest, terminating close to an earthen circus which was probably the meeting place or moot of the community. Across the valley to the west, on Balmer Huff, an adjacent spur, there is evidence of another village of the same period. Although ploughed level, a large amount of pottery, calcined flints and Roman tile is distributed over a wide area. In 1849 the cemetery[7] of these neighbouring villages was discovered in the head of the valley between them. It was a circular area, 135 ft. across, in which cinerary urns containing cremated remains had been placed at a depth of $2\frac{1}{2}$ ft. Between the two sites and extending for a considerable distance to the north and south there is a finely developed stretch of Celtic fields. Thus we have an even more perfect example of the appearance of the Downs during the Roman period. In one big group of fields we see

[5] *Antiquaries Journal*, 1933, XIII, 109–51.

[6] *Brighton and Hove Archaeologist*, II, 29–40; III, 62–74.

[7] *Sussex Archaeological Collections*, 1877, XVIII, 65.


DISTRIBUTION OF THE CELTIC FIELD SYSTEM
and contemporary Settlements in the
BRIGHTON AREA
CLAYTON
WESTMESTON
PLUMPTON
PLUMPTON PLAIN
BLACK CAP
OFFHAM
LEWES
POYNINGS
EDBURTON
FULKING
SADDLESCOMBE
WEST SADDLESCOMBE HILL
DEVILS DYKE
NEWTIMBER HILL
TRULEIGH HILL
EDBURTON HILL
PERCHING HILL
FULKING HILL
UPPER BEEDING
BEEDING HILL
THUNDERSBARROW HILL
COCKROOST HILL
HIGHDOLE HILL
SWEET HILL
SOUTH HILL
SCARP HILL
TEDDOWN HILL
STANMER
PATCHAM
ROUND HILL
RED HILL
HOLLINGBURY HILL
PALMER
KINGSTON
IFORD
RODMELL
SOUTHEASE
HANGLETON
WEST BLATCHINGTON
SLOUGH HILL
MILL HILL
OLD SHOREHAM
SHOREHAM-BY-SEA
KINGSTON BUCI
SOUTHWICK
PORTSLADE
HOVE
BRIGHTON
WHITEHAWK HILL
ROTTINGDEAN
OVINGDEAN
TELSCOMBE
PIDDINGHOE
RIVER ADUR
RIVER OUSE
Visible extent of Celtic lynchets
Probable original extent of ditto
Site of small settlement
Site of settlement of uncertain size
Village Site
Hill Fort
Roman Villa
A Late Bronze Age
B Hallstatt-La Tene I
C La Tene III
D Romano-British
Modern Towns
Present day Villages
R. GURD. 1935
0 MILES
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15

two, or perhaps three, villages with their contemporary roadways, their circus or moot,* and their cemetery.

On Plumpton Plain (FIG. 4) two sites[8] of an earlier and rarer type

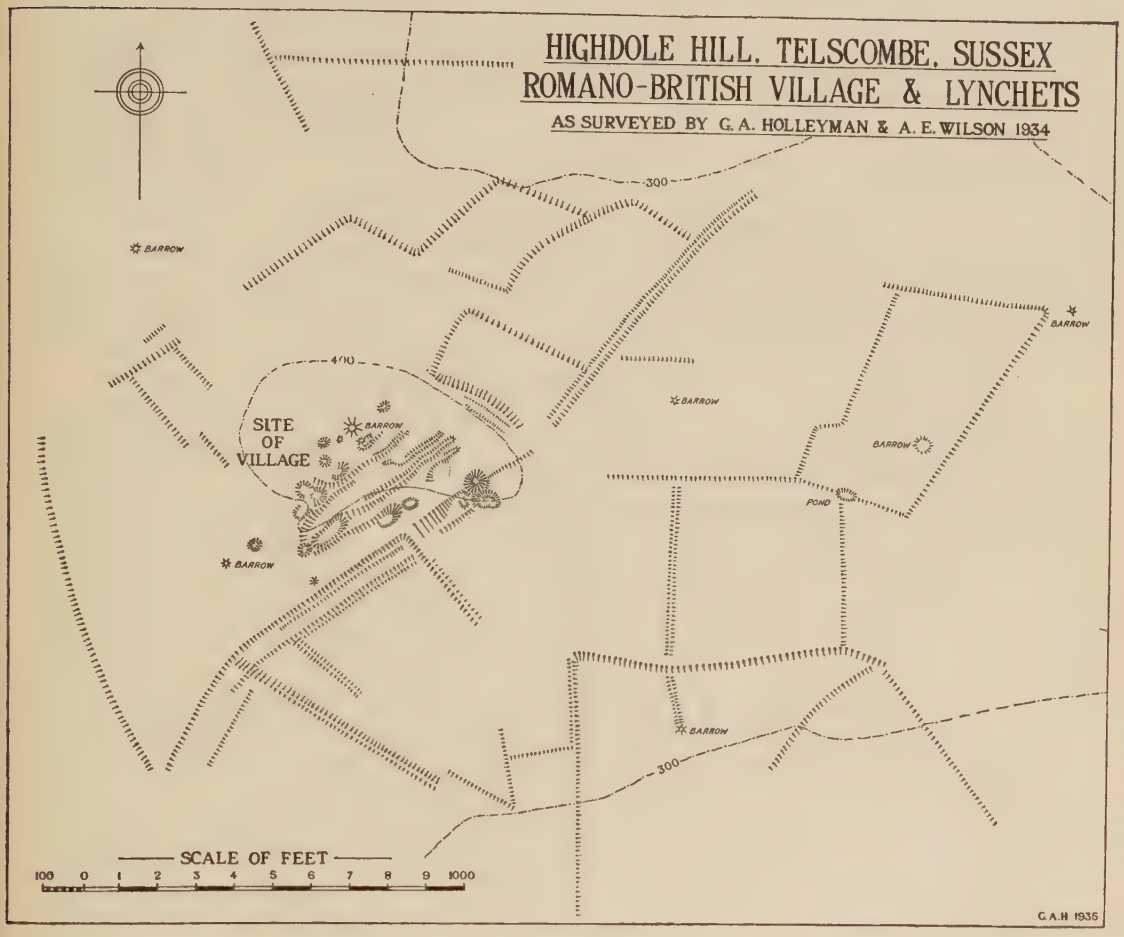


FIG. 2

have been discovered in connexion with lynchet-groups. Site A comprises four compounds or enclosures belonging to the Late Bronze

* Opinions differ about the purpose of these earthworks; the moot theory is not generally accepted.—EDITOR.

[8] G. A. Holleyman and E. C. Curwen, 'Late Bronze Age lynchet-settlements on Plumpton Plain, Sussex', *Proc. of the Prehist. Soc.*, 1935.

Age in which the positions of circular huts and water catchments were found. Integrally associated with them is a small group of lynchets enclosing typical Celtic fields. Across Faulkner's Bottom to the west two isolated enclosures of the same type are situated on the eastern slope of Streat Hill. They were made on the side of an ancient terrace-way and each has a small group of lynchets close by. Site B was found on a small lateral spur a quarter of a mile to the southeast of site A. The only surface-evidence of its existence was a quantity of small gritty sherds close to a low bank and ditch running across the spur. It was occupied from the Late Bronze Age to the Hallstatt period and then deserted. The fields contiguous with site A lie to the west but a larger group of well-defined lynchets extends to the south. There is no definite proof that these are associated with site B, but as no trace of Romano-British occupation has been found in the vicinity, in spite of careful search, this is highly probable. In the southwest corner of the same plan two more sites are marked on Stanmer Down. The first, in the extreme southwest, comprises a small cluster of circular depressions in and about which coarse, gritty sherds of Hallstatt character with fragments of calcined flint and sandstone are strewn. A more complete survey of the spot with the surrounding lynchets must be made before the two can be chronologically related. The second site is marked only by a fair number of Hallstatt sherds and the ubiquitous pot-boilers. As this is within a lynchet-group, but is close to where present-day ploughing has encroached, it is impossible to tell whether the Celtic or the modern fields hide the positions of the huts.

The field-worker should be wary of marking a certain spot where a few sherds may be picked up, with no other surface-evidence, as the site of an Early British village. Only when a considerable quantity is found in conjunction with burnt flint and other objects, and in close proximity to a series of Celtic fields, can one be certain of the place having been occupied for a definite period of time. Pottery-dating may even give the approximate period of occupation if the surface sherds are sufficiently large. If the pits have been levelled their exact whereabouts can often be detected by ' bosing ' or ' percussing ' the ground with a metal rammer. This implement is the usual type used by navvies and is invaluable when the presence of pits is suspected yet no visible trace is apparent. A simple change of note occurs when disturbed ground is thumped after solid ground has been worked over.

Four Early Iron Age hill-forts lie within the area of our survey, viz : Thundersbarrow, the Devil's Dyke, Wolstonbury and Hollingbury.

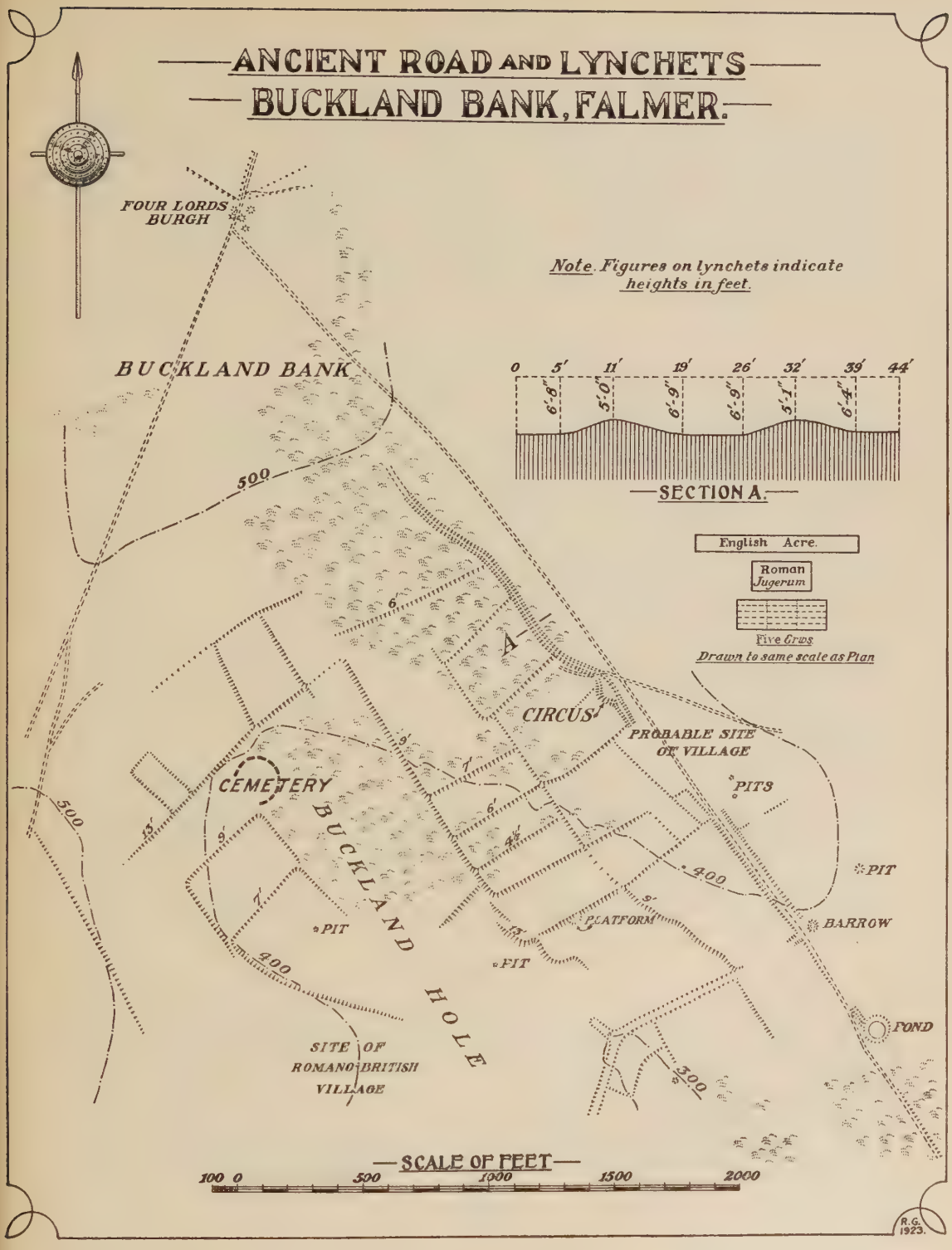

ANCIENT ROAD AND LYNCHETS
BUCKLAND BANK, FALMER.
FOUR LORDS BURGH
Note. Figures on lynchets indicate heights in feet.
0 5' 11' 19' 26' 32' 39' 44'
6'-8" 5'-0" 6'-9" 6'-9" 5'-1" 6'-4"
SECTION A.
BUCKLAND BANK
500
English Acre.
Roman Jugerum
Five Grws
Drawn to same scale as Plan
CIRCUS
PROBABLE SITE OF VILLAGE
CEMETERY
PITS
PIT
400
PLATFORM
BARROW
PIT
PIT
BUCKLAND HOLE
SITE OF ROMANO-BRITISH VILLAGE
POND
300
SCALE OF FEET
100 0 500 1000 1500 2000
R.G. 1923.

FIG. 3

They have all been examined with the spade except the Devil's Dyke. In none was there any evidence to suggest the presence of a settlement or any prolonged occupation ; rather were they places of refuge and retreat in times of danger. Although built during the early part of the Celtic corn-growing period no lynchets appear integrally associated with them. The fields surrounding the Thundersbarrow hill-fort were formed long after the latter had fallen into disuse.

The Field-Ways

It has not been possible to mark associated field-ways on the distribution-map although all the known varieties occur. A fine example of a bivallate[9] road is shown in the Buckland Bank plan and another equally good but shorter stretch runs between Highdole Hill and Pickers Hill north of Telscombe. Double-lynchet roads are most common though few long stretches remain ; the finest remaining portion is to be seen on the Brighton and Hove golf course and is believed to be part of Port's Road running from Southwick, via Hangleton, to the Devils Dyke.[10] Other forms noted are the terrace-way, generally regarded as Roman, and the hollow-way or sunken road. An example of the former runs along the eastern face of Wolstonbury Hill to terminate close to a Romano-British village of the late 4th century. From the numerous fragments of field-ways extant it is evident that a well organized road-system existed on the Downs during the whole of the Celtic period.

Three cross-ridge dykes were found but their exact relationship with nearby settlements is difficult to ascertain. Not one appears to be in a position of strategic importance, and for defensive earthworks their length, height, and situations are totally inadequate. The three examples noted were, in the writer's opinion, used either as tribal boundaries or to prevent cattle from straying or being stolen.

Conclusions

This survey has shown with great clarity the extent to which the chalk uplands were inhabited and cultivated during Celtic times and particularly during the Romano-British period. We see large tracts

[9] A bivallate road is a slightly hollowed track between two low banks. A double-lynchet road is a track along a hillside between a positive lynchet above and a negative lynchet below. Terrace-ways have, as a rule, been engineered and are not the result of ploughing.

[10] *Brighton and Hove Archaeologist*, III, 28–41.

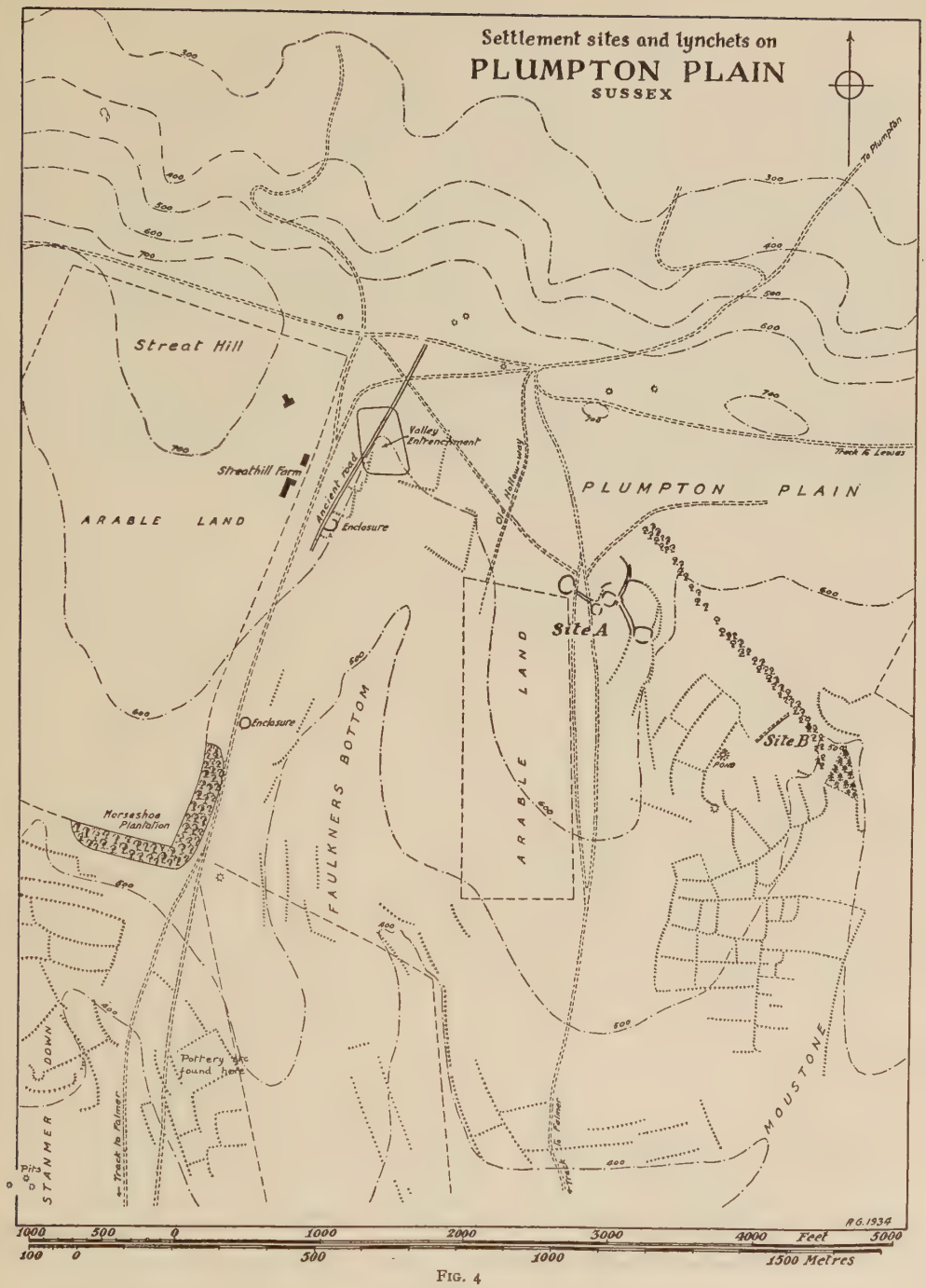

Settlement sites and lynchets on
PLUMPTON PLAIN
SUSSEX
To Plumpton
Streat Hill
Streathill Farm
ARABLE LAND
Ancient Road
Enclosure
Valley Entrenchment
Old Holloway
Track to Lewes
PLUMPTON PLAIN
Site A
ARABLE LAND
Site B
Pond
Enclosure
FAULKNERS BOTTOM
Horseshoe Plantation
Pottery sherds found here
STANMER DOWN
Track to Falmer
Pit
MOUSTONE
Track to Plumpton
R.G. 1934
1000 500 0 1000 2000 3000 4000 Feet 5000
100 0 500 1000 1500 Metres

FIG. 4

of downland devoted to corn-growing, each controlled by one or more villages, hamlets or farms. There is little doubt that many of the settlements were occupied for long periods, as on Thundersbarrow, where the village had its inception in La Tène III and was tenanted until the end of the 4th century A.D., or as on Park Brow,[11] near Worthing, where there was a continuous succession of settlements from the Late Bronze Age until the coming of the Saxons. It also shows that conditions were peaceful and prosperous and confirms the evidence of classical writers that South Britain was an important centre of corn production.

In conclusion the writer wishes to thank the instigator of this survey, Dr E. Cecil Curwen, for kind assistance and encouragement throughout, also those fellow field-workers whose observations and discoveries have considerably added to its completeness.

[11] *Archaeologia*, 1927, LXXII, 1–40.

Britain in the Dark Ages

by J. N. L. Myres

Map of Britain in the Dark Ages. South Sheet. Scale 1:1,000,000. Ordnance Survey, Southampton. 1935. Mounted and folded, 5*s* 0*d*, other styles available.

'ALL that learning can extract from the rubbish of the Dark Ages is copiously stated by Archbishop Usher in his *Brittanicarum Ecclesiarum Antiquitates*', wrote Edward Gibbon in a moment when the conflicting emotions of irritation and complacency had fought one another to a standstill in his heroic breast.[1] And while it would be unjust to censure the great historian for an exaggeration at once pious and harmless, it is legitimate to observe that neither he nor the good Archbishop had thought of plotting 'the rubbish of the Dark Ages' on a map. That task has at last been tackled by the enlightened Direction of the Ordnance Survey; and although we can hardly be rash enough to assume that its completion may have moved Gibbon in the Elysian fields to reconsider the propriety of his preposterous dictum, it is at least a matter for sincere congratulation in more mundane circles.

The work has necessarily been one of extreme difficulty, a difficulty which can perhaps best be appreciated by a comparison with the corresponding Map of Roman Britain, for the existence of which both teachers and students of the period have blessed the Ordnance Survey since its first appearance in 1924. For this the archaeological material was of paramount importance, and its classification under well defined headings —Towns, Villas, Villages, Forts, and so on—each with its appropriate symbol, was a matter which, if certainly laborious, did not provide too many insoluble problems once the main principles were laid down. At least the great gulf fixed by archaeology between the cultural remains of the Roman period and those of Iron Age Britain on the one side, and Anglo-Saxon England on the other made it comparatively simple to decide what deserved a place on the map and what did not, while the paucity of literary material gave the result a homogeneity, which could hardly have been expected had it been necessary to cull the evidence from a greater variety of sources.

In every one of these ways the Dark Age Map was a much more awkward problem. Although an upper limit of date was ready made with the 'departure of the Romans', it raised inevitably the question how much of the Romano-British past should legitimately be included

[1] *Decline and Fall*, ed. Bury (1925) IV, p. 67, n. 23.

as necessary to the understanding of the new society. Roman roads, for example, were certainly available for transit in Saxon times to at least the extent to which they were available later in the Middle Ages : the ruins of Roman towns, even of those which were never reoccupied, must have been conspicuous objects in the Anglo-Saxon landscape, and sometimes influenced its later administrative divisions. Is a picture of Saxon England complete without them ? The principle here adopted has been to include those only which are mentioned in sources of the period or have produced archaeological remains of Dark Age date : a principle which could perhaps be criticized for undue austerity, for it has left the Saxons with no roads at all but the Kentish Watling Street, the Icknield Way, and the Berkshire Ridgeway, and some towns such as Colchester are conspicuous by their absence. It is reassuring to know, however, that a more wholehearted attempt to portray the roads of the Saxon period will be made on the promised map of the period 871–1066.

This brings us to a further difficulty. The lower limit of date has been fixed at 871, the beginning of the reign of Alfred. The Dark Age, like any other Age, must of course end somewhere, and there are better reasons in England than in Europe as a whole for ending it at a date which excludes the greater part of the Viking period although in the opinion of many scholars that period marked the darkest hour of all. For England, uncheered by the premature dawn of the Carolingian Renaissance, could the better react to the social and political devastation caused by the Norsemen with the first glimmerings of national unity. And the accession of Alfred marks unquestionably the beginning of this new epoch. None the less there was no sudden change, and the choice of the year 871 indicates really no more than a desire to limit the picture of Saxon England to the pre-Danish phase, a fact clearly shown by the deliberate exclusion from the map of such Viking names as were in evidence before that date.

Even so, however, the period represented is both longer and far less homogeneous than that shown on the Romano-British map. In the Lowland Zone we see the pagan cemeteries and certain place-names which belong to the age of chaos and conquest cheek by jowl with the churches and crosses of the eighth and ninth centuries, symbols of a settled and more civilized community. The Wansdyke, which can only represent a political situation already obsolete before the earliest days of the historic Wessex, is marked with the same symbol as Offa's Dyke, the expression of the great era of Mercian expansion in the

eighth century. The Dark Age Map thus hardly tells its story by itself as does the Roman Map : and for the full appreciation of it considerable knowledge both of the period and of the sources is essential. Whether it would be possible to make its lessons more obvious by printing the sites of the pagan period in one colour, and those of the Christian in another, while inevitably leaving many of the place-names doubtful, has probably been discussed already in the proper quarters : it would certainly increase very greatly the value of the map as an educational weapon if something of this kind could be attempted in the next edition.

One further suggestion may be offered in the matter of classification. The symbol for churches has been limited to those sites ' where it is certain upon archaeological grounds that such existed '. Monasteries, on the other hand, though so essential a feature of the period both in the Celtic and the Saxon lands, are not distinguished either as churches or by a special sign of their own, although in fact the more important of them do appear disguised as ' Other Places '. This leads to some odd and rather unhistorical impressions (Wirksworth or Britford, for example, as churches, while Repton, Oundle, Abingdon or Whitby are just ' Other Places '). The reason given for the exclusion of a symbol for monasteries, that apart from the known sites ' many others . . . certainly existed, though unrecorded ', is a counsel of perfection which has fortunately not been followed in dealing with other classes of the evidence. If the pagan cemeteries or even the crosses had been excluded because those known represent only a tithe of what once existed, the map would have been reduced to an almost worthless blank. And the monasteries certainly deserve a special symbol, accompanied by the date of foundation where known, if only because their distribution in lowland England is a matter of the greatest interest : it is one of the few clues that we have to the gradual opening up of areas of secondary settlement after the first rush of the conquest was over.

Here and there, as is inevitable in a pioneer work of this kind, some sites which deserve inclusion seem somehow to have slipped off the lists. Take Yorkshire for example. Even if the Anglian girdle-hangers in the Aldborough Museum hardly demand the insertion of a pagan burial at Isurium Brigantum, there are undoubted cemetery groups from Robin Hood's Bay and Scampston Park, Rillington, in the Yorkshire Museum ; there are the fragments of the cross from Cundall, now at Aldborough Manor, and there is the historically interesting

place-name in Dera Wuda which Bede associates with the monastery of Beverley.[2]

But to emphasize such criticisms would be to do less than justice to the singular merits of the map. It illustrates in striking fashion the differences which in this as in every age have held apart the Highland from the Lowland Zone of Britain. The use of Mr Nash-Williams' card-index of the Welsh inscribed stones has given for the first time a picture of the twin *foci* of dark age Christianity in the northwest and south of the principality. The inclusion of all boundary ditches and travelling earthworks, many of them hitherto recorded inadequately or not at all (irrespective of a proved origin in this period, which most of them at present lack) is a generous and welcome feature. The recent results of place-name study have made it possible to identify and localize a number of those folk-names, such as the Sweordora and Herstingas of the Tribal Hidage, or the Sunningas of the Chertsey charter, which covered England before the later administrative units of Shire and Hundred drove most of them out of memory : some of these however, like the early *provinciae* of Kent, or the Faenn-ge and Gegingas of Essex seem rather unaccountably missing.

Other classes of the place-name evidence it has not been found possible to include on the main map. For this, however, compensation is provided in the form of a smaller map in the Introduction showing the distribution of names in -ing (singular and plural), together with those containing names of heathen gods or sanctuaries. The ' -ingas ' names, it is generally agreed, belong to the oldest stratum of Teutonic nomenclature in England, but historians have always felt chary of utilizing them as direct evidence for penetration in the heathen period, because there seemed no sure means of knowing when they ceased to be formed. Not the least valuable part of the present publication is that side by side and uniform with the map on which they are shown has been printed another showing the distribution of the pagan Anglo-Saxon cemeteries. Historians are thus provided with the raw material for comparing, both in the mass and in detail, the distribution of the ' -ingas ' names with that of archaeological material all of which can be dated with confidence before the middle of the seventh century. If the two distributions are found to coincide it will be very strong evidence to suggest that the place-names too can be safely dated to the heathen period.

The two distributions are markedly similar in their general lay-out.

[2] H.E. v. 2.

Both cover roughly southeastern England within a line from Southampton to Gloucester, and there northeastwards to Whitby. Both show beyond these limits a stray or two near the Tees valley and an isolated example on the Northumberland coast ; and if there are four ' -ingas ' names in Lancashire unmatched by cemeteries, there are four cemeteries in South Wilts and one in Somerset beyond the limits of the ' -ingas ' names in this direction. And it so happens that all these five are known to fall late in the archaeological list.

We may therefore set our doubts at rest as to the general contemporaneity of the two series. It would seem as certain as anything can be in these dark centuries that the ' -ingas ' names as a whole were formed in the pagan period or not much later. This qualification is perhaps advisable because a closer inspection of some areas confirms the feeling raised by the Lancashire ' -ingas ' (perhaps a product of Northumbrian expansion under Ethelfrith or Edwin in the first half of the seventh century) that the formation of such names may have continued in some districts rather longer than the practice of pagan burial. In Sussex, for example, the pattern of the pagan cemeteries, practically confined to the strip between the northern escarpment of the South Downs and the sea, is definitely more primitive and limited than that of the ' -ingas ' names which extend also freely along the base of the South Downs and for some distance up some of the rivers. If we say that most ' -ingas ' names were formed in the fifth and sixth centuries, a few after 600, and none after 700, the limits are wide enough to be reasonably safe. And something of value has been gained for the historian.

But within the general similarity there are some curious differences of distribution. A more pronounced concentration of the cemeteries than of the ' -ingas ' names in the major river valleys may merely reflect once more the slightly earlier emphasis of the former in date, but there are large areas such as Essex which though full of ' -ingas ' names have produced little or no archaeological material, and conversely there are others such as the Cambridge region, the Oxford district, Lincolnshire or the valley of the Middle Trent, where a mass of early cemeteries finds little or no echo on the place-name map. Comparing the two sets of evidence as a whole, it is indeed a somewhat striking fact that if, as we assume, the men who formed the ' -ingas ' communities were contemporary with those who found their last resting places in the pagan cemeteries, there should be so few instances in which we can actually identify the two. There are some 200 ' -ingas '

place-names marked on this map, but not more than a dozen of these, of which Reading (Berks) and Kettering (Northants) are the best known cases, are also distinguished as the sites of pagan cemeteries.

A few specialists have long been dimly and rather uneasily conscious of these odd divergencies, particularly perhaps of the startling contrast between the cemeteries-without-' -ingas ' of the Cambridge region and the ' -ingas '-without-cemeteries of Essex, but with the publication of the Dark Age Map the specialists lose willy-nilly their monopoly of the awkward secret. And with the relevant facts thus conveniently and for the first time at our disposal, it may be worth while to draw attention to some points which should help to put the difficulty in its true perspective, and to indicate its historical interest.[3]

It goes without saying that any tendency to magnify the problem should be sternly resisted. Neither group of evidence is or ever will be complete : both at best are but representative selections of the material which was once in existence or may still be found, and some of the discrepancies in distribution are doubtless due to the fact that the selection being to a large extent accidental is bound here and there to be misleading. However, if we turn our thoughts again to the contrast of Cambridge and Essex, it is clear that chance alone will not supply the answer.

There are ways too in which some of these chance discrepancies due to paucity of evidence may be discounted. To take, as has here been done, only the ' -ingas ' without considering the ' -ingahams ' and certain other compounds, can be justified on grounds of prudence, for many of these forms, notably the ' -ingtons ', are notoriously difficult of interpretation and some of them are irrelevant to the discussion, not being really based upon ' -ingas ' forms at all. All, even the ' -ingahams ', which have the strongest claims to antiquity, are perhaps later in date than the simple folk-names uncompounded. But a compound whose early forms show a basic ' -ingas ' stem is, whatever its own date, evidence for the previous existence of the ' -ingas ' group in question. And where such compounds occur within the part of England in which such folk-names are common, there is no reason for rejecting their

[3] Mention must here be made of the great debt which all students of this topic and the compilers of the map owe to Professor Ekwall's *English Place-names in -ing* (Lund, 1923). He did not however attempt to date his material by comparison with that of the archaeologists, and his suggestion that the ' -ingas ' names as a whole are ' not much later than *c.* 500 ' (p. 115) has not commanded universal assent for it depends upon the acceptance of the traditional story of the West Saxon advance from Southampton Water. See below, p. 464, for further treatment of this aspect of the question.

plain evidence merely because they have at a later date received a termination which was then in vogue. Bensington near Dorchester-on-Thames, for example, is the ' tun ' of the ' Banisa ingas ', and we have the less right to disbelieve in the existence here of such a folk at an early date when we remember that in later days the village was the centre of one of those great estates which like Sonning and Reading, further down the river, seem to have carried on into the Middle Ages not only the names but the geographical outlines of a folk settlement in the Thames valley going back to the earliest times.[4] And if we can put Bensington and many others like it on the ' -ingas ' map, some of the blank areas where cemeteries alone exist will tend to disappear. The process is one which must be applied with the utmost caution and the fullest safeguards, but the principle behind its application is perfectly sound.*

Even so however the problem will remain, and perhaps the best way of tackling it is to consider the relative survival value, so to speak, of cemeteries and folk-names, the two classes of our evidence. Pagan Saxon cemeteries, as the excavated instances repeatedly show, have stood a greater chance of surviving more or less undisturbed until the days of systematic record in the eighteenth and nineteenth centuries, where they lay out in the open fields or on the permanent pasture of the Downs away from the villages or towns of later times. Many it is true have been discovered during building operations but in most cases such building has been on ground hitherto open, not within areas already filled with houses and shops. To put the matter in a different way, it is in those regions in which there have been most changes in the detailed distribution of population since pagan times that our Anglo-Saxon cemeteries will tend to be most in evidence. Where village life has been undisturbed since the days of the first settlers, especially perhaps where the Christian has directly succeeded to the pagan graveyard, there in countless cases the ceaseless and necessary routine of the village sexton must have destroyed piecemeal and unnoticed the good work of his heathen predecessor.

But those are precisely the villages in which continuity of occupation is most likely to be typified by the retention of the earliest types of place-names. Such names are tender plants, especially in the early days when, as was the case with the ' -ingas ', they were not really the

[4] Stenton, *Introduction to the Survey of English Place-Names* (1924), pp. 41, 172.

* A distribution-map of names in -ingaham will be given in future editions of the map.—O.G.S.C.

names of places at all but the names of the folk who lived there. If one fine day in the sixth or seventh centuries the huts of the Woccingas were burnt by the raiding bands of Ceawlin or Penda, and the survivors decided to start again some distance away from the old site, the new village might turn out to be Wokingham, but it might equally well be Drayton or Clayton and the folk-name would then be lost for good. If we are right in thinking that new names in ' -ingas ' were not formed in any number after the seventh century, then all civil disturbances in that and later times in southeastern England are likely to have resulted in wastage of such primitive names, and the wastage will be the greater in proportion to the extent and frequency of such commotions in the different districts. Meanwhile the cemeteries of the communities which altered their positions and lost their early names acquired by mere disuse a survival value higher than those of the communities which remained. The two distributions will thus tend in extreme instances to exclude one another.

It is easy to try this explanation on the ground and to see how in some of the crucial cases it will work. Everything goes to show that the Cambridge region, so fertile in remains of the pagan period, so poor in early place-names, was a battle ground in the seventh century between East Anglia and Mercia in their struggle for the control of the Middle Angles.[5] Cambridge itself the natural centre of it, and surrounded with early cemeteries, was a *civitatula quondam desolata* when the monks of Ely came sailing by in 695 in search of a stone coffin for St. Etheldreda.[6] Equally desolate no doubt were many of the surrounding communities whose cemeteries we now know by the names of their successors: Girton, Barrington, Little Wilbraham, or Haslingfield. The Oxford district was similarly in the late seventh and eighth centuries the scene in which Wessex fought a rearguard action with the rising power of Mercia, and it is here between the Chilterns and Fairford that the trail of ' -ingas ' names up the Thames valley to the Goring gap gives place to a striking group of early cemeteries. It is customary to explain the scantiness of primitive place-names in Lincolnshire by reference to its thorough Scandinavianization later on, and no doubt there is much truth in this. But here too we may remember that in the seventh century Lindsey repeatedly changed hands in the struggles between Mercia and Northumbria and is not likely to have suffered these changes without severe

[5] C. Fox, *Archaeology of the Cambridge Region* (1923), pp. 245, 295.

[6] Bede, H. E., IV, 19.

social dislocation.[7] And finally the case of the Isle of Wight is not without interest. The island has produced more archaeological evidence of its early Jutish population than the neighbouring parts of Hampshire, but on the ' -ingas ' map it is a blank. We remember without surprise that Caedwalla of Wessex in 685–6 attempted to exterminate the island Jutes and to replace them by West Saxon settlers.[8]

The regions in which ' -ingas ' names are most frequent at the present day are Sussex, Kent, Essex and East Anglia. Sussex was described by Eddius early in the eighth century as ' a province which has impregnably resisted the attacks of other provinces owing to the difficulty of the terrain and the density of the woods ', and there is no reason to doubt the essential justice of his description.[9] Hemmed in between the weald and the sea it was the most isolated and the least disturbed of the Saxon Kingdoms, and it retains by far the highest percentage of archaic names. Kent, in early times the richest and most stable kingdom, seems to have been but little affected by external troubles except for an incursion by Ethelred of Mercia until late in the eighth century, and soon afterwards passed easily and permanently under the benevolent control of Wessex. East Anglia proper can hardly have suffered as severely from her losing struggle with Mercia as did her outlying dependencies in the Cambridge region and round the Southern margin of the Fens. It would be foolish to claim that the present argument solves the standing puzzle of the blank made by Essex in the archaeological map of sixth-century England; but here too the difficult forest country, and the poverty of its scanty population, may partly explain both the uneventful character of East Saxon history and the survival of so many of its ancient names.

Our survey may thus be summarized by suggesting that the archaeological and the place-name evidence plotted on these maps forms a consistent and intelligible whole, for its two halves are mutually complementary. To depend on the negative evidence of either by itself is liable to be misleading: but taken together they provide a reliable test of the areas most thickly settled by the Anglo-Saxon people in the earliest phase of their history. And if following this clue we try to visualize the settlement by super-imposing the one distribution on the other there will be a further moral of some interest to be drawn.

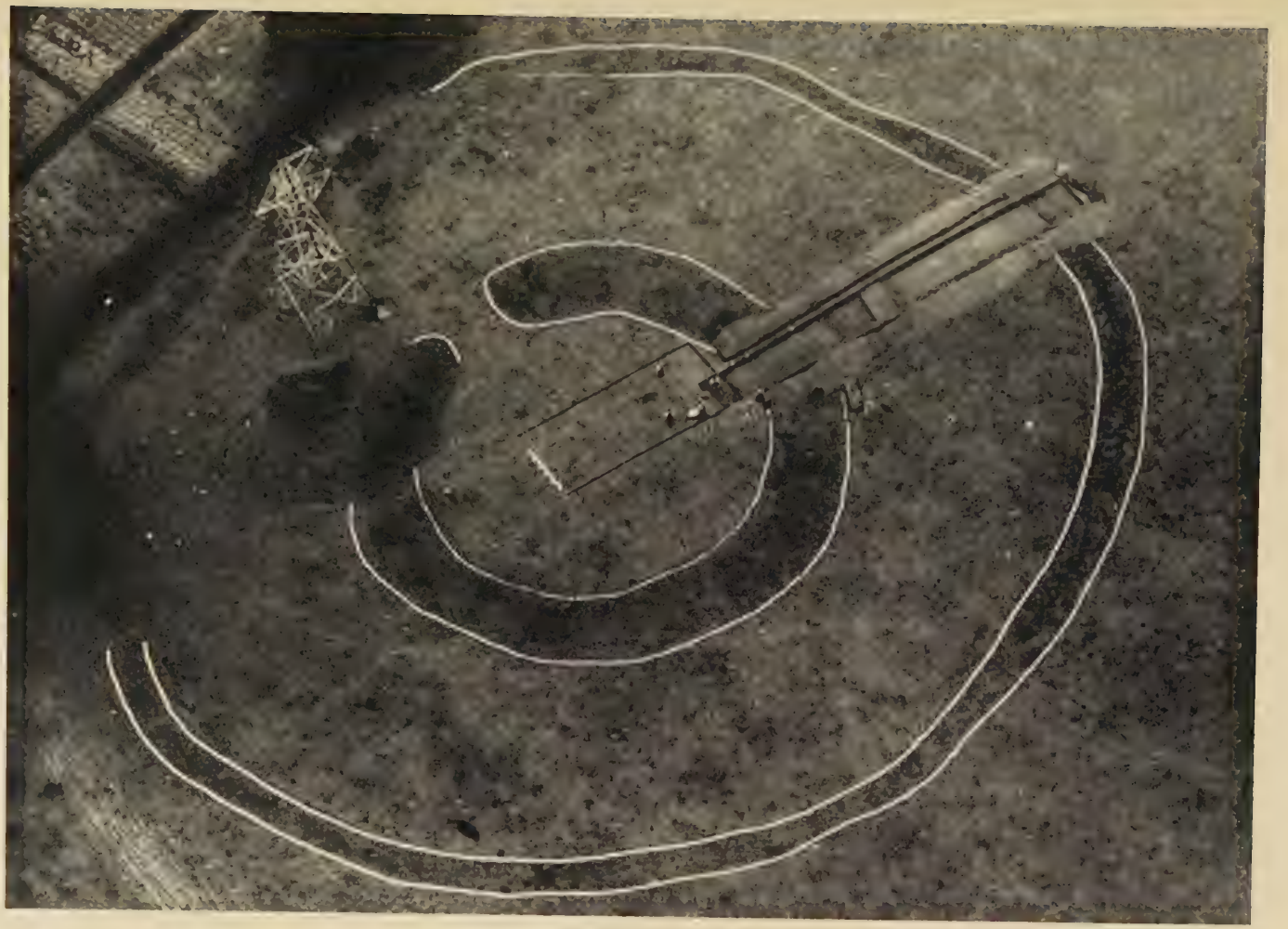
[8] Bede, H. E., IV, 16. [9] *Vita Wilfridi*, c. 41.

[7] Plummer's note on Bede H. E. III, 11, conveniently summarizes these changes in the political allegiance of seventh-century Lindsey.

In England south of the Trent, and within the limits traditionally associated with Saxon occupation in this period, four areas will show up as relatively free from either type of evidence : the Fenland bordering on the Wash ; the country northwest of London between the Lea, the Chiltern escarpment and the Middle Thames ; the Andredesweald ; and the traditional homeland of the kings of Wessex, the chalk uplands of Hampshire, Wiltshire, and South Berks. It is legitimate to infer from the unanimity between the two distributions that in these areas Anglo-Saxon folk had not yet driven their roots firmly into the soil. What were the reasons ? We need not go further than Felix's eighth-century Life of S. Guthlac to appreciate the Saxon horror of the Fens :[10] and a phrase in which Eddius at much the same period speaks graphically of the outlaw's home *in desertis Ciltine et Ondred* may serve in part at least to explain two others,[11] but what are we to say of the traditional conquests of Cerdic and Cynric ? If we follow Mr Hodgkin in his recent opinion that they were ' clever and adaptable men who saw that the depositing of weapons and jewellery with the corpses was an unnecessary extravagance ',[12] we must, it appears, believe also that they imposed a ban on the adoption of ' -ingas ' names by their followers, an action in which the qualities of cleverness and adaptability are not so immediately apparent. Were they perhaps leaders without an army ? Or have they derived a reflected and undeserved glory from the deeds of their remote and more substantial descendants ? There is no sure answer at present to these questions : one may note only that, if our line of thought has any value, the really damaging thing about the story of the West Saxon heroes is not the paucity of the archaeological evidence in Hampshire and Wiltshire, of which so much has been made, but the almost complete absence in a land so little disturbed by later invaders of the earliest types of place-names.

The moral of this over-lengthy discussion is two-fold. First we should like to see the early place-names on the next edition of the Dark Age Map printed if possible in the same colour as the cemeteries. And second, gratitude for the present publication far outweighs any criticism that may be made against its details. In the Dark Ages more perhaps than in any other period maps are the only sure basis of historical knowledge, and this is the first attempt at a complete map that has been made. Now at last, thanks to the Ordnance Survey, the historians of these dark centuries can get on with their job.

[10] See ANTIQUITY (1934) VIII, p. 191. [11] *Vita Wilfridi*, c. 42.
[12] *History of the Anglo-Saxons* (1935), I, p. 131.



NORWICH 'WOODHENGE'

Oblique aerial photograph of the site at an early stage of the excavations. The white lines were painted in lime on the ground to mark the limits of luxuriant [illegible] growth, indicating the presence of ditches. The scale (near the centre of the plate) is marked off in units of a yard each. (*See* p. 466)

Air-ph. Mr H. F. Low, Norwich Aero Club, 1935

facing p. 464

NORWICH 'WOODHENGE'

Central portion of the inner ditch cleared to the undisturbed gravel (*See* p. 466)

Ph. Hallam Ashley

NORWICH 'WOODHENGE'

Central area skinned to the gravel surface. The white pegs show the positions of the eight post-holes and are placed in the same axes as the ramps (*See* p. 467)

Ph. Hallam Ashley

PLATE IV

NORWICH 'WOODHENGE'
A Post-hole sectioned at its maximum diameter (*See* p. 468)
Ph. Hallam Ashley

Notes and News

THE NORWICH ' WOODHENGE ' (PLATES I–IV)

The September number of ANTIQUITY, 1929, opened with the Editor's statement that ' another Woodhenge has been found, just outside the City of Norwich ', consisting of ' two concentric rings surrounding a circle of nine dark spots representing without doubt wooden post-holes '. The Editor went on to ascribe the monument to Beaker folk, probably from the mouths of the Rhine, where, as he remarked, timber circles abounded at that period.

The excavations, which I had the honour to direct on behalf of the Norfolk Research Committee, with the able assistance of Mr Rainbird Clarke, Mr C. W. Phillips, F.S.A., and Miss G. M. White, during August and early September of the present year, have confirmed in almost every particular the prognostications of the Editor. The fact that it is becoming increasingly possible to prophesy what the spade will ultimately reveal illustrates the advance of prehistoric archaeology towards the standing of an exact science. In the romantic stage of archaeology the attraction of the Unknown (including Treasure of Untold Value) was perhaps the chief stimulus that drove men to dig. In these more sophisticated days we undergo the strains and expenses entailed by modern standards of excavation to demonstrate objectively, what our knowledge of the already vast comparative material has led us to expect. The spade, like the surgeon's knife, serves increasingly to confirm diagnosis. The days when monuments and victims were cut up for curiosity are (to those who have faith) past and finished. We are entitled to hope, under the new Act, that the day is also finished for planting a giant electric pylon[1] upon a monument of the importance of the Norwich ' Woodhenge ', within a few months of its discovery being announced to the world !

When the excavations began this year the two rings, the outer broken by an old field drain and the modern hedge, and the inner

[1] I must add that the Norwich representatives of the Electricity Board extended facilities for utilizing their pylon for photographs and generally showed a keen interest in what was going on. No doubt, if representations had been made from the right quarter, the Electricity Board would have planted its pylon elsewhere.

interrupted by what was evidently a causeway, were clearly visible on the ground, though no signs of post-holes or other features could be detected in the central area. In order to plan the existing features, which a continuance of the drought might have rendered indistinct or even obliterated, the areas of luxuriant vegetation were demarcated on the ground by a four-inch line of lime. An air-photograph was then taken by Mr H. F. Low of the Norfolk and Norwich Aero Club (PLATE I) which illustrates that our ground work was substantially accurate, apart from a gap immediately below the patch of nettles[2] which prevented our marking the ground for part of the inner circle and put us slightly out of line in its neighbourhood. A five-yard scale was painted on the ground in the central area and is visible in the photograph. The pylon, of which mention has been made, stands outside the inner circle but within the outer one ; the lines crossing the photograph obliquely are the actual cables.

The first step in the excavation was the cutting of an 11 ft. section from outside the monument to the edge of the central area within the inner ring, a distance of 100 feet. The beginning of this cutting, and the outline of the first rectangle to be moved from the central area, can be seen in the air-photograph. The outer circle proved to be a shallow ditch 12 ft. wide at the lip and 4 ft. 8 ins. deep below modern surface ; the inner circle on the other hand proved to be a substantial ditch 28 ft. across and 7 ft. 8 ins. deep. Between the two ditches, both of which were shallow relatively to their width, were the remains of a bank ; this was much ploughed down, but its width and the relatively small capacity of the ditches suggest that it can never have amounted to very much.

The outer ditch produced some 3rd century Romano-British sherds above a sterile layer overlying the primary silting ; the rest of the ditch had been filled by material ploughed in during historic times. The inner ditch produced stratigraphical evidence of importance. Our photograph shows the central portion of the ditch cleared out down to undisturbed gravel (PLATE II). Over three feet of the infilling has been ploughed in at a time when chalk was used to marl the ground. Below this down to the bottom of the black zone of the ranging pole occurred quantities of Early Iron Age pottery, which has yet to be examined, and a strong admixture of Romano-British material, sherds and coins, which appear to date from the 3rd century A.D. It is evident that the

[2] These were caused by the outflow from a modern drain.

Early Iron Age levels were disturbed in Romano-British times, an interpretation confirmed by the cutting of the inner ditch at the entrance where similar Early Iron Age wares were found with little or no Romano-British material. Below the Early Iron Age level there occurred a sterile zone of primary infilling resting on a thin charcoal stratum on the floor of the ditch. This charcoal seam, which is visible on the right of the section shown in PLATE II, thickened to six or seven inches at the deepest part of the ditch and disappeared on the left of the ranging pole. It produced 16 sherds of pottery and three or four ' crumbs ' all of the same ware, resembling beaker on the inside and decorated in rusticated finger-nail style[3] on the outer surface.

The central area was stripped to the gravel and sand surface in order to recover constructional features. The sites of the post-holes, revealed by Wing-Commander Insall's original air-photographs, were found quite easily on removing the turf and topsoil, but they declined in number from nine to eight ; this, in fact, was one of the few rectifications achieved by the excavation—the timber part of the monument was of horse-shoe plan, being open to the causeway entrance to the central area. In plan, therefore, the timber uprights resembled the arrangement of the inner horseshoe of bluestones and of the trilithons themselves at Stonehenge. No other traces of disturbance within the central area were met with, nor were any traces of hearths or other indications of occupation discovered. As might have been expected each of the post-holes was provided with a ramp ; slight indications of them were to be seen in plan and they were in each case verified by sections. An interesting fact which emerged was that the ramps all point in the same general direction . . . up-hill towards higher ground, and away from the sudden slope down to the river Tas. In the photograph taken from the pylon and reproduced on PLATE III the axes of the ramps are indicated by white pegs. The significance of this fact will be obvious. The heavy oak trunks, which we found to have been three feet in diameter, were dragged downhill ; but clearly they were not hauled across the very substantial inner ditch, and on the other hand the entrance to the central area is at right angles to this line and to the axes of the ramps ; therefore the timber uprights were erected before the construction of the inner ditch.

Time and resources did not allow of the complete excavation of the moment, but the nature of the post-holes was satisfactorily

[3] Whether this was really done by the finger-nail or by an implement giving a similar impression I should hardly like to say.

established from the excavation of two examples ; one of these was cut to reveal the post-hole and ramp in section, the other to obtain as perfect a section of the post-hole itself as could be obtained. The ramp of the first post-hole investigated sloped down obliquely to the bottom of the post-hole (7 ft. 10 ins. in undisturbed gravel) from a point 12¼ ft. from its centre. A photograph of the second excavated post-hole at its maximum diameter is reproduced on PLATE IV.

The line of the original excavation was easy to distinguish in the field and can be seen particularly well towards the bottom right-hand corner of the plate. The other outer limit is visible approximately six inches to the left of the ranging pole. The outline of the actual post itself was indicated even more clearly and gives little sign of distortion. Naturally the wood itself has gone long ago, but the charred base was almost intact and sufficient traces of the charred sides have remained to preserve the outline of a trunk three feet in diameter. Both the posts examined were oak. Nothing of archaeological interest was found during the excavation of either post-hole.

The excavation of the central area was extended to include the entrance, which proved to be a causeway of firm gravel showing no signs of disturbance. One end of the inner ditch was cleared out, but the slope was so gradual that we got no primary material. A stratum containing Early Iron Age pottery was found overlying a layer of primary silting.

The horseshoe of timber uprights, having been shown to antedate the inner ditch, must be at least as old as the pottery obtained from the floor of that ditch in the first cutting. But it is obvious that the inner ditch was dug round the timber construction as part of one scheme, since the causewayed entrance is placed symmetrically thereto. Therefore for all practical purposes the pottery from the floor of the inner ditch can safely be used to date the monument. This is not the time or the place to discuss the chronology of this type of pottery in detail, but it is sufficient to say that it does not differ substantially in age from the familiar Beaker. Exactly similar pottery is illustrated by Curwen from Whitehawk Camp, Brighton, where it was found in association with Beaker, and separated by a phase of natural silting from the Neolithic A2 pottery normal to the site.[4] The pottery is common to southeast Britain and the Low Countries, and probably reached us as one of the many elements which came from the Lower Rhine area during the Beaker Period.

[4] *Antiquaries Journal*, 1934, p. 119, fig. 57.

The Norwich 'Woodhenge'—I use the term generically—like the original Woodhenge and like Stonehenge itself, seems to have been primarily a sacred place, in the proximity of which are the remains of numerous round barrows. As larger areas are searched from the air it may be expected that many more monuments of this kind will be revealed. For permission to excavate the Norwich site and for other assistance we are greatly indebted to the owner of the land, Mr Russell Colman, Lord-Lieutenant of the County. J. G. D. CLARK.

THE WHITE HORSE OF KENT

The reproduction by Dr R. E. M. Wheeler in his *London and the Saxons* (London Museum Catalogues, no. 6, 1935) of a wood-cut from Richard Verstegan's *A Restitution of Decayed Intelligence in Antiquities* (Amsterdam 1605, London 1634) depicting 'the arrivall of the first ancestors of Englishmen out of Germany into Brittaine' (see FIGURE), is a timely reminder that Richard is the earliest authority to attribute the badge of a White Horse to the leader of the Saxon invaders.

How far Richard was correct in saying that 'a horse argent rampant in a field gules' was the ancient device of Saxony, and that 'they have there long since for many ages together borne', we cannot tell. He had, while at Christ Church, distinguished himself as a scholar of Early English history and the Anglo-Saxon language, and it seems likely that when as a consequence of his religious beliefs he migrated to Amsterdam, he had the necessary facilities for an investigation of such matters had he wished to continue his studies. In any case there seems nothing inherently improbable in his statement, since the Teutonic predilection for horse-mythology is well known, and the White Horse was certainly adopted in later years as a device both by the State of Saxony and the House of Brunswick. Whatever basis of truth there may or may not be in Richard's illustration of Hengist's landing in Kent, the fact remains that John Speed, writing his *Theatre of the Empire of Great Britain* only five years later in 1611, boldly assigned a device of arms to each kingdom of the Heptarchy, and to the kingdom of Kent in particular he assigned the white horse on a red ground, saying furthermore that it was the emblem of the Saxons.

In criticism of Richard's illustration, it may be pointed out by students of heraldry, and with some justice, that armorial bearings of this sort were scarcely known until the later part of the 12th century, and further, that if there were certain devices and figures in use in

earlier days (as the Bayeux Tapestry seems to indicate), then they can have had no specific relationship to the later system of heraldic bearings.

By the end of the 18th century, the customary use of the White Horse emblem, reinforced perhaps by a Royal Warrant of 1751 which ordered the Hanoverian Horse to be worn by certain ranks in the 50th (Royal West Kent) Regiment, had become well recognized; and Hasted,

HENGIST AND HORSA LANDING IN KENT, A.D. 449

in his *History of Kent* (1797 ed., 1, 64) commenting on Verstegan's statement, adds that 'similar to which are the present arms of this county the only difference being the colour of the field'. A further 18th century use is well attested by the Kentish tradesmen's tokens. During the next century and a quarter the wonted right of the County to bear the device of the White Horse was never seriously questioned,

and in the 19th century, as Mr A. J. Golding has pointed out to me, the rampant horse was used freely as a local trade-mark, as the badge of the County Cricket Eleven and the Kent County Constabulary, and as the distinguishing mark on Kentish hop-pockets.

This respectable ascription of the White Horse however, is sometimes overlooked in favour of a rather tenuous belief that the standard of the Saxons, a banner emblazoned with a rampant White Horse, was set up on the Kentish Standard Stone or White Horse Stone by the two chieftains Hengist and Horsa at the time of the battle of Aylesford in 455. A variation of the legend says that the Saxon standard was found under the stone after the battle.[1] In this connexion the present White Horse Stone at Aylesford, a standing sarsen which may be a relic of a megalithic burial-chamber, can be dismissed from consideration at once : it received its name in the early nineteen hundreds from a local antiquarian.[2] The original or Lower White Horse Stone known also as the Kentish Standard Stone, has now disappeared, but it stood formerly at the crossing of the Pilgrim's Way with the Rochester-Maidstone road at Aylesford, and its name, though a little older than that of the present White Horse Stone, does not appear earlier than 1834. The stone itself was quite probably part of a ruined megalith.

It would also be very easy to show that the claims of two other suggestions for the origin of the White Horse—namely, the familiar horse-and-chariot coins of the Early Iron Age and the various items in the horse complex of the Early Iron Age, cannot now be seriously maintained. In fact, all things considered, it seems very unlikely that the White Horse of Kent existed before the early part of the 17th century.

R. F. Jessup.

RAG-WELLS

Miss M. D. Hiley sends us particulars of a rag-well, known as St. Bennet's Well.

' It is near the high-water mark on the shores of Moray Firth about 1½ miles SSE of Cromarty (6 inch map, sheet LXVII) and is situated at the foot of a beautiful little glen which runs inland from the coast.

[1] But it should be said in fairness to Lamprey, the supposed author, that he himself recognized the thinness of the White Horse standard tradition. The ' Standard Field ' of Stukeley, *Itinerarium Curiosum*, 2nd edition, II, plate XXXIII, has obviously no connexion with it.

[2] It seems possible that the name may have been suggested by a hypothetical earlier name ' hoar stone ', but I know of no specific evidence for such a name here. O.G.S.C.

' In order to insure the fulfilment of the wish it is essential that the wisher should drink the water and leave something of his personal attire. When the writer visited the spot there was a heterogeneous collection of " rags " hanging on the branches.

' Mr Francis Scott tells me that the site is locally supposed to be the place of judgment. It is close to the ruins of St. Bennet's chapel and the ground is said to be cursed as it was stolen from the Church. Even at the present day the owner has to provide each year at Christmastide 8 cwt. of oatmeal free for the poor of the parish. This has been operative since 1630 and though one owner tested the matter in the highest court of law in Scotland his appeal was not allowed '.

A ROMAN VILLA AT DITCHLEY, OXON. (PLATES V–VI)

The existence of a Roman building in Watts Wells Field South, on Lodge Farm, Ditchley, has long been known to archaeologists. About 60 years ago Pitt-Rivers cut trial trenches in which he uncovered part of a pavement of *opus signinum*. Last year Mr E. J. Walford, of Coventry, flying over the site noted the remarkable completeness of the plan outlined in the growing crop. A series of photographs taken by Major G. W. G. Allen revealed features of considerable interest which promised to throw light on several problems connected with the villa-system. Aided by the support of the Ashmolean Museum an Excavation Committee was formed with Professor R. G. Collingwood as Chairman. Mr Ronald Tree, M.P., the owner of the site, agreed to serve on the Committee, to which he granted every facility for the exploration. With consent of the tenant, Mr C. Hunt, and H.M. Office of Works work began 26 August. The remains have been surveyed by Mr J. J. Leeming. Work was also carried out by Mr D. B. Harden on the neighbouring section of Grim's Ditch, of which the relation to the Villas in the neighbourhood has already been discussed by Mr O. G. S. Crawford (ANTIQUITY, 1930, IV, 303–15, with map, p. 305).

The site lies about 430 ft. above sea-level on the north side of a small valley, a tributary of the Glyme. The ground occupied slopes gently to the south and east. The air-photographs show a large courtyard enclosed by a wall and ditch. The entrance on the south side is approached by a road, flanked by ditches and leading in the direction of the Akeman Street, 2 miles distant. At the upper end of the courtyard lies the house, facing south. It consists of a central block with

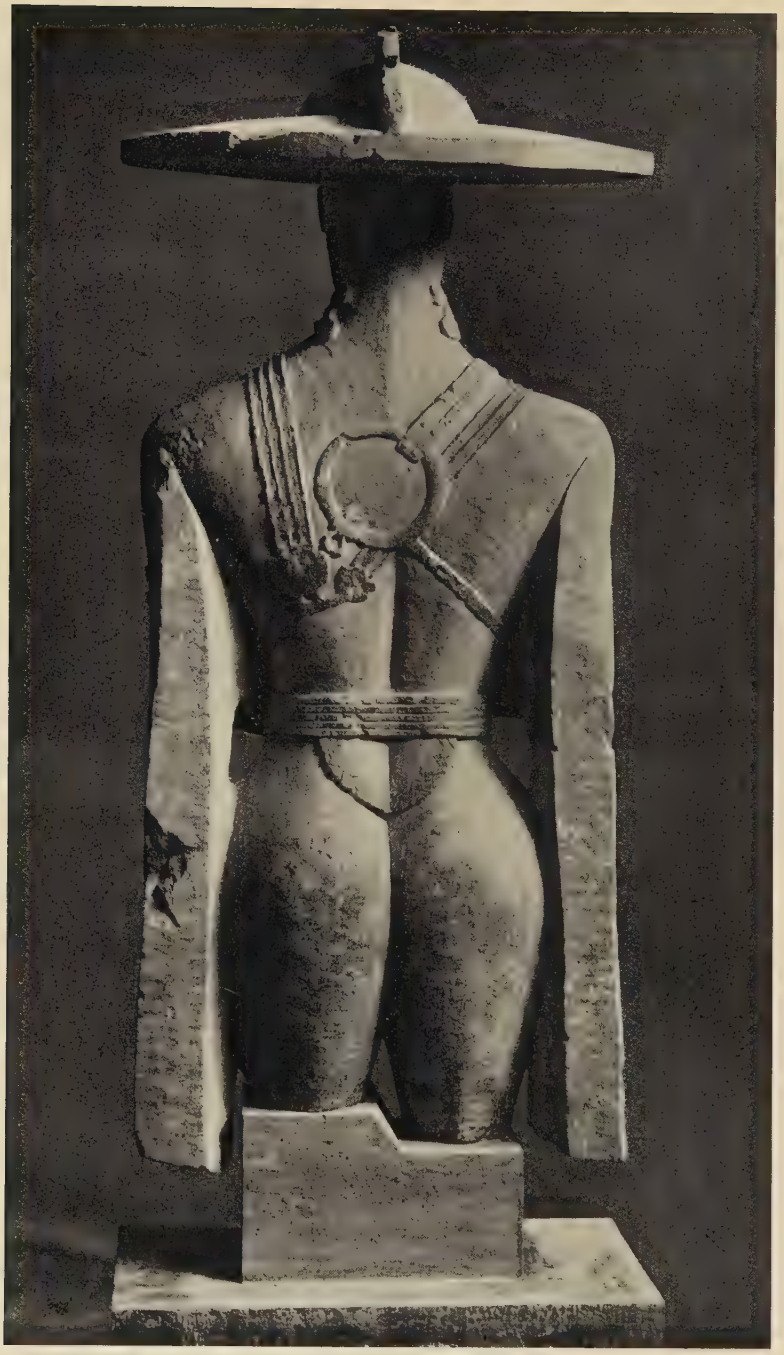
ROMAN VILLA, DITCHLEY VIEW FROM SOUTHWEST, MAY 1934. FIELD UNDER CORN (*See* p. 472)
Air-ph. Major G. W. G. Allen

PLATE VI

ROMAN VILLA, DITCHLEY: VIEW FROM SOUTHEAST, MAY 1934. FIELD UNDER CORN (*See* p. 472)
The line crossing the ditch in the foreground is a modern field drain

PLATE VII

THE WARRIOR OF CAPESTRANO, AQUILA (*See* p. 477)
By courtesy of Prof. G. Moretti, Director National Museum, Rome



THE WARRIOR OF CAPESTRANO, AQUILA (*See* p. 477)
By courtesy of Prof. G. Moretti, Director National Museum, Rome

PLATE IX

BLACK DITCH FIELD, STANTON HARCOURT (*See* p. 478)
Air-ph. Major G. W. G. Allen

PLATE X

TRINDAL'S FARM, CHILWORTH ; showing unusual markings not found elsewhere (*See* p. 479)

Air-ph. Major G. W. G. Allen

PLATE XI

TRINDAL'S FARM, CHILWORTH; showing unusual markings not found elsewhere (*See* p. 479)

Air ph Major G. W. G. Allen

ESTHONIAN PEASANT LIGHTING HIS PIPE WITH FLINT AND STEEL (*See* p. 479)
Ph. Dr T. Manninen, 1925 (*by courtesy of the Esthonian Museum*)

projecting wings at each end. At the back is a range of small rooms, and a verandah extends along the whole of the front and sides. The parched appearance of the crop suggests pavements at the northwest corner. In front of the house is a dark circle now known to represent a well. Extensive but incomplete lines of masonry indicate further buildings at the southern end of the courtyard, while a small incomplete circle appears near the centre of the west side.

During the excavations the house has been completely cleared. The southern building and the courtyard, which have been much destroyed by the plough, have been explored by a series of trial trenches, as a complete exposure of these remains did not seem to justify the expenditure involved. The work has provided satisfactory evidence for the history of the site and of the various building periods. At present only a tentative chronology can be put forward as the detailed examination of the pottery is not yet completed.

The earliest building on the site of the house is a rectangular structure of timber, measuring 55 ft. by 55 ft. The post-holes, about 9 inches in diameter, discovered under the western wing and the central block of the later house indicate a building of slight construction which must have been destroyed when the earliest masonry was laid. The second house consisted of a central block with projecting wings at each end, but no verandah. The inconvenience of a sloping site was avoided by a massive substructure of masonry raising all the floors to approximately the same level. Above this the building was half-timbered with rubble-filling between the beams and a roof of tiles. The lower storey had wooden floors carried on joists beneath which were voids varying from a few inches to nearly 3 ft. in depth. The entrance was in the eastern wing, where a flight of three stone steps (indicated on the air-photograph by a white blur) covers the whole of the front and returns along the eastern side. At the other end of the central block the long narrow division (3) contained the stairs leading to the upper storey. It is clear that the earlier building was not long in use and it may tentatively be assigned to the period A.D. 70–80 when the site was first occupied. The deposits contemporary with the stone substructure contain nothing that need be later than A.D. 100, and in the forecourt a coin of Trajan in mint condition was found in a position suggesting that it had been dropped during the building operations.

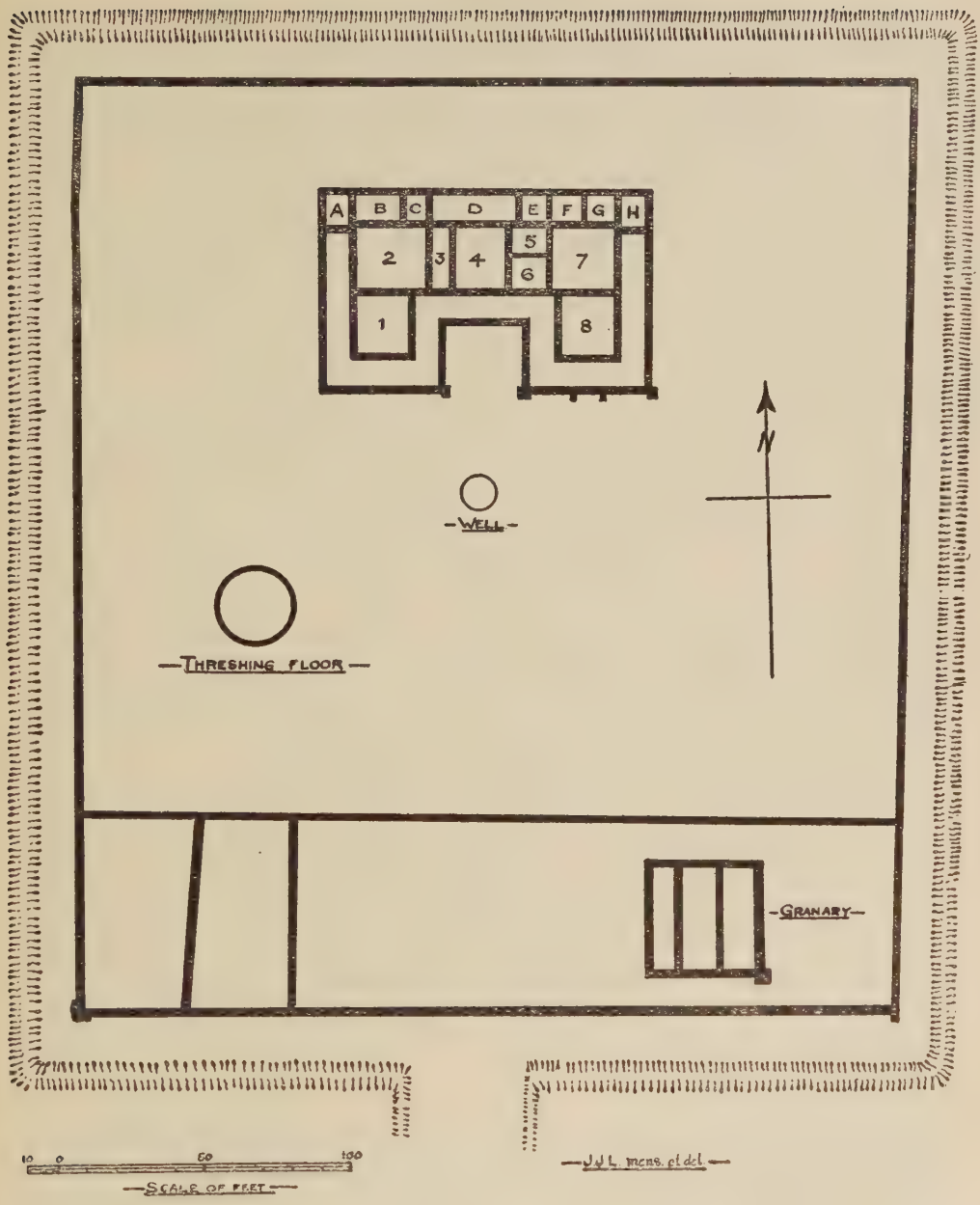
During the second century a long corridor was added at the back of the house. It had a floor of stones and gravel following the slope of the ground, and was roofed with Stonesfield slates. Later partitions

were inserted at the east end, carrying wooden floors similar to those of the main house but at a lower level. This enlarged house was partially burnt. The fire seems to have been most violent in the west wing and at the back, where thick deposits of burnt debris were uncovered lying where they fell. Elsewhere the evidence suggests that flaming timbers from the roof fell against the outer face of the masonry substructure and were consumed, burning the face of the stone to a bright red.

Large piles of the rubble-filling of the half-timbered work lying against the masonry suggest a period of desertion and gradual decay (cf. the southern building *infra*), a hypothesis which is corroborated by the almost complete absence of coins and other objects of the third century.

The last house was on a grander scale. The original substructure was used as a foundation for a two-storeyed building. Along the front and sides a verandah of a single storey was added, the parts at the rear of each wing being partitioned off. The series of small rooms on the north side, was rebuilt on the older foundations. The entrance remained in the eastern wing, where the new verandah was adorned with a colonnade. The four projecting piers of masonry carried stone columns, 1 foot 6 inches in diameter. Considerable parts of two bases and one complete drum have been recovered. The masonry of this period was poor in comparison with the earlier work. Many weathered and perished stones were used, the defects being disguised by the thick coating of plaster with which the outer walls were finished. Pavements of *opus signinum*, laid on thick beds of obliquely pitched stones which in turn rested on a filling of clay and rubbish, were found in the four rooms in the northwest part of the house. Elsewhere the plough had removed the surface but the bedding survived in most of the rooms. This final rebuilding should probably be attributed to the Constantinian period though the evidence for this date is admittedly slight. The series of coins shows a marked predominance of issues later than A.D. 364 and proves that the site was occupied up to the end of the fourth century and probably later. The house gradually fell into decay. Squatters or travellers camped in some of the rooms where their fires burnt holes in the pavements, leaving a thick layer of wood ash at a period when part of the roof had yet to fall.

The sequence at the southern end of the courtyard confirms the evidence of the house. At the lowest level were traces of a wooden structure with sleeper beams and a clay floor. Above this an extensive



ROMAN VILLA, DITCHLEY: PLAN WITH WALLS AND DITCHES RESTORED

building or series of buildings occupied the whole end of the enclosure. The stone base of the walls was robbed to below floor-level over the greater part of the area, but in those places where the remains had been preserved to a greater depth it was evident that the upper part of the walls was of timber plastered with clay, and that they had been allowed to decay gradually, covering the occupation-level with a thick layer of yellow material. The latest pottery found under this dates from the end of the second century. The evidence of human occupation and the size of the building lead to the conclusion that it was used as barracks for the slaves cultivating the estates of the villa. After an interval, when the site was reoccupied, the barracks were not rebuilt, but near the southeastern angle of the courtyard a granary was erected over the fallen material. This is probably contemporary with the Constantinian rebuilding of the house. The small circle of masonry on the west side represents a threshing-floor of a primitive type, beneath which lay the remains of an earlier circle evidently unknown to the builders.

The ditch surrounding the courtyard was v-shaped and nearly 6 ft. deep. The lowest levels of the silt contained pottery of Flavian date, after which the ditch was allowed to fill up. Its existence implies an original bank surmounted by a timber stockade. This survived until the final rebuilding of the house when the bank was used as a quarry for the material required to fill the voids below floor-level. The masonry of the courtyard-wall also suggests that it was erected at a late date and resembles some of the contemporary work in the house.

The sections cut through Grim's Ditch show that the bank rests on plough-land and agree with the dating suggested in the article referred to. The evidence of a change in the methods of cultivation in the latest period and the high proportion of late coins found on the site suggest that the villa-system, though not necessarily the house, survived many years after the beginning of the 5th century and that it was still working when the Ditch was erected to bar the roads leading from the north and east. C. A. Ralegh Radford.

TEMPLE OF ARMANT

Mr Oliver H. Myers writes that the Egypt Exploration Society is trying to reconstruct graphically the temple of Armant and the scenes which covered its walls. The temple was destroyed during the latter half of the 19th century to make the foundations of a sugar factory. In 1857 Francis Frith took at least three photographs of this temple,

which were published in *Egypt and Palestine*, 1858–9, and *Egypt, Nubia and Ethiopia*, 1862. Maxime du Camp published another in *Egypte, Nubie, Palestine et Syrie*, 1852, and Félix Teynard one in *Egypt et Nubie*, 1858. The negatives of these, or any other prints or negatives of this temple, would be of the greatest assistance, and the Society (200 Euston road, London, N.W. 1) would be extremely grateful to anyone who could help in the search for them.

The temple was built by Cleopatra and was the only one standing at Armant in recent times. Armant is variously spelt Armant (correct), Erment, Ermant and Hermonthis.

THE CAPESTRANO WARRIOR (PLATES VII–VIII)

We are very much indebted to Professor G. MORETTI, Director of the National Museum at Rome, for allowing us to publish the following note and illustrations, in response to our request. Dr RANDALL MACIVER, who has translated the text, tells us that he is in entire agreement with Professor Moretti's views.

The territory of the Vestini, extending along the slope of the Gran Sasso towards the Adriatic, has never been explored, and even chance finds had provided us with little evidence of its life in the so-called ' Italic period ' until almost the other day. Last winter however there was found at Capestrano, in the province of Aquila, near the source of the little river Tirino, a tributary of the Atirno, which rises in a cleft of the Apennines between La Majella and the Gran Sasso, a statue now known as the ' Warrior of Capestrano '. This has no equal in Italic art for rarity and importance.

The figure is of life-size, 1.70m high, and stands rigidly erect on a rough plinth between two shafts which serve as supports. It is naked except for a full complement of armour and weapons. The armour consists of helmet, mask, cuirass formed of a single disk at front and back, and stomach-piece. The weapons are a sword and dagger worn in front of the figure, and a spear resting against the outside of each of the stone supports.

Down the length of the right-hand support runs an inscription of which the epigraphy and linguistic character are consonant with the archaeological style of the statue and its stylistic peculiarities. For while the conception and arrangement of the figure place it in the 6th century before Christ, all the details of arms and equipment can no less

exactly be paralleled by finds of the same period made in tombs of the Early Iron Age in the central regions of Italy. The wide-brimmed helmet and the mask are eminently Picene ; the sword and dagger have their equivalents in Etruria, especially in respect of the hilts decorated with human and animal figures ; while the disc-cuirass, girdle, torque and armlets can be matched from almost any of the cemeteries in Samnium, such as Aufidena, or in the territory of the Marsi, Marrucini, Peligni, Picentini.

The statue of Capestrano, severely stylized like every work of that period, shows us the true and proper figure of a man in the attributes of his most usual profession, that of a warrior. The absence of clothing, the monumental character of the headgear, the hierarchical gesture of a symbolical axe laid against the left shoulder—all these suggest something between human and superhuman. We may therefore regard it as a semi-divinized warrior (*guerriero eroizzato*).

At a short distance from the torso (for the legs and base of the statue were found subsequently, as a result of explorations made by the Service of Antiquities), was found the bust of a woman. The head was missing but there were new and important details in the clothing of the figure. It is possible that the woman, whose proportions were smaller, viz. about two-thirds of life size, was some sort of relation or dependant of the warrior. No tomb however could be identified as belonging to either of the two figures, though 21 tombs were opened in the course of trial excavations made in the hope of determining the archaeological background of this unexpected and important discovery.

NEW AIR-PHOTOGRAPHS (PLATES IX–XI)

The first of these air-photographs (all of them taken by Major Allen) is of Blackditch Field, Stanton Harcourt (Oxon 32 SW, SE, 38 NW, NE), and reveals markings of three distinct periods (PLATE IX). Certainly the oldest are the parallel black lines leading to two enclosures in the middle of the picture. This may be prehistoric or Romano-British. Next come the remains of the medieval field-system, represented by the parallel ridges in the foreground. It is interesting to note that the dark furrow-lines between the ridges are continued by those dividing the existing allotment-strips in the triangular space on the right, next to the road ; also that this intensive and prolonged medieval cultivation has not obliterated the earlier remains. (For a similar phenomenon in the same neighbourhood see ANTIQUITY, 1933,

VII, 293). Finally we have the modern field-system which conforms partly but not wholly with that which preceded it.

The other two air-photographs (PLATES X–XI) give two views of the same site, Trindal's Farm, Chilworth (Oxon 40 NE). No explanation is offered, however. Nothing quite like the markings has been encountered before elsewhere, and since surface observation is unlikely to help, excavation seems indicated. They are probably medieval. The geological formation is gault clay, overlaid by plateau gravel.

PRIMITIVE FIRE-MAKING (PLATE XII)

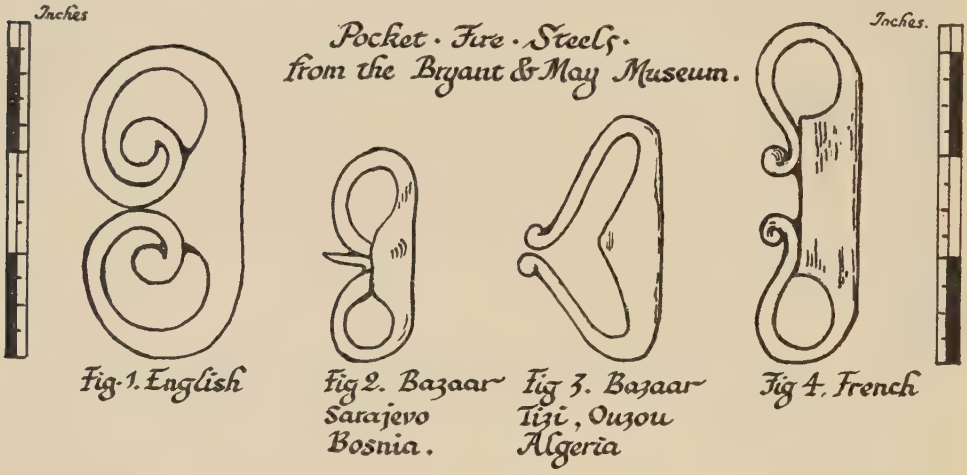
The accompanying illustration of an Esthonian peasant living in the parish of Halliste in the arrondissement of Pärnu, and photographed in 1925, is not without interest to those who follow the survival of ancient methods in modern times. This Esthonian is engaged in lighting his pipe with a ' briquet ' (flint and steel) and the very idea that such primitive methods still survived as late as 1925 is apt to raise a smile. But up to the year 1835, every house in England possessed and used its tinder boxes and the unlucky individual who had to rise betimes would spend from three minutes to half an hour in securing a light, unless the tinder was damp, when the process was still further prolonged.

How many children today, who have read Hans Andersen's ' Soldier and the Tinder Box ', have ever actually seen one ? Yet its ancestry comes down to us from pre-Roman days, unaltered by the passage of time, till, with the coming of Queen Victoria, friction matches swept the time-honoured tinderbox aside, so that it only lingered on in little backwaters of Europe or among savage tribes. Familiarity breeds contempt and the ease of the friction-match has made us forget that fire-making is man's greatest achievement, and that the tinder-box has its place in the study of cultural anthropology.

The essentials of fire-making are flint or flinty stone such as chert, chalcedony, jasper or agate, having a sharp cutting-edge, and a piece of suitably tempered iron or steel. The flint should be struck sharply and at an angle upon the steel so as to shave off a tiny fragment of the metal, heated to white heat by the percussion and glowing as it falls upon the tinder. And what is tinder ? It may be charred rag, or ' touchwood ' or a dried fungus steeped in saltpetre, generally known as ' amadou ' or German tinder. The best kind of flint for this purpose is from the chalk of northwest Europe and notably from Brandon

in Suffolk, where the industry of flint-knapping still survives and whence ' briquet ' flints were exported by Fred Snare to Spain, South America and Borneo as late as 1924.* Brandon flints have also been found in Syria and Siberia. Yet another source of supply is the Kentish flint shipped as ballast to Shanghai, where it is used partly for china making and also for strike-a-lights. In the southeast of Europe a different type of flint is used. Not infrequently these are enclosed in leaden sheaths for protection. Turkey is the chief source of supply.

The steel held by the Esthonian peasant is of a familiar type, which has a wide distribution. It has two tangs which form a hand-hold at the back. It appears to be quite without ornament, though it



is possible that the tangs may be twisted into a spiral or knobs. In general form it might be English. Indeed in the Bryant and May Collection (no. 265) is an almost exact counterpart, described as English. Other similar forms in the same collection are no. 177, bought in the bazaar at Sarajevo in 1895, no. 182 from the bazaar in Tizi Ouzou, Algeria (1898) and possibly no. 329, a French example (see FIG. above).

One thing is wanting in the photograph, and that is the pouch or box in which the flint and steel were carried. These receptacles display a great variety of material. All are small so that they may conveniently be carried in the pocket. European tinder-pouches are usually about

* See ANTIQUITY, March 1935, pp. 38–56, 8 plates.

PLATE XIII

THE FORT OF WAL-WAL, ABYSSINIA (*See* p. 481)
In its essential features the fort closely resembles many prehistoric forts in Britain
Ph. Planet News

facing p. 481

three inches square, the opening at the top being closed by a flap. Leather is the material most commonly selected, though tapestry, woolwork or beadwork are also used. Flint and tinder are carried inside, but the steel is very often fixed to the bottom of the bag. The sulphur-tipped match of either paper or wood, which figures in the outfit of the domestic tinder-box, was not usually carried with the tinder-pouch, which was mainly used for lighting the pipe direct from the tinder without the intervention of the match. FRANK STEVENS.

THE FORT AT WAL WAL (PLATE XIII)

Wal Wal is a fort built by the Italians in Abyssinia at some date subsequent to 1928. It is actually on the edge of a small ravine. The purpose for which it was built was to command the wells which lie in the small ravine just below, beyond the picture on the upper side. There are some 60 to 100 wells with narrow shafts of between 60–100 ft. depth through sandstone. The picture is taken looking towards the ravine, and the tracks on the upper portion of it represent the motor road to Warder.

It will be seen at a glance that the fort very closely resembles in all its essential features many prehistoric hill-forts in Britain. It consists of a ditch and bank with a wooden palisade planted along the foot of the bank on the inside. There is one entrance defended by a subsidiary bank thrown out, exactly as at Hod Hill and Hambledon Hill (see *Wessex from the Air*, plates 1 to 3).

The mushroom-like objects in the interior are native Somali huts (gurgi). They are portable, are made by women, and are roofed with branches on which camel-mats (herios) of plaited grass (also made by the women) are placed. The roofing consists of branches bent over to meet in the middle, where they are lashed together with thongs. A not dissimilar method was employed for reed huts in ancient Mesopotamia : in one instance however the ends of the reeds were left projecting beyond the roof on either side. (See Mallowan in *Iraq*, April 1935, II, 31–2, fig. 19). (These herios are also used on the backs of camels where they are placed three deep in order to support the load, and for beds laid on the ground). It should be mentioned that these very thick roof-coverings maintain an equable temperature against extremes both of heat and cold. These huts obviously house native troops.

The two huts at the right hand side of the enclosure are the head-quarters where the officers live and work.

It will be noticed that at one end of the upper building is a dead tree, to which a post has been attached from which the Italian flag may be seen flying.

The (H.Q.) buildings in question are called ' arish ' in Somali. The sides are made of wattle and daub and the roof of grass or mud.

The two excrescences are puzzling but probably represent machine-gun posts. It will be noticed they are approached by a communication trench and that actually two men are to be identified in the right hand post by means of their white turbans. It is presumed that the machine gun would be placed on a tripod on the central platform, and that if thus raised it would just clear the surrounding parapet.

Finally, the whole is surrounded by an artificial zareba of thorn which can be seen in the foreground and in the top corners as a tangle of light-coloured brushwood. There is an entrance to the zareba in the right hand bottom corner, where two figures may be seen, one standing and the other squatting, in front of them being a bush that is doubtless drawn in to close the breach at night and whenever occasion may require it.

The whole is a very informative example of the way in which similar causes produce similar effects, both in the past and in the present.

The general plan of the fort has no doubt been designed in accordance with local native tradition, but the European control exercised in this instance is obviously responsible for such very modern features as the machine-gun posts.

We are indebted to one of our readers for drawing our attention to this very interesting example of the past and the present.

PREHISTORIC CONGRESS

The Second International Congress of Prehistoric and Protohistoric Sciences, following on the First Session held in London in 1932, is to take place at Oslo in August 1936.

Professor J. L. Myres is one of the General Secretaries of the Congress and the National Secretaries for Great Britain are Professor V. Gordon Childe (The University, Edinburgh) and Mr C. F. C. Hawkes (British Museum). Copies of pamphlets giving general particulars of the Congress (with form of enrolment) may be obtained from the Bureau at the UNIVERSITETETS OLDSAKSAMLING, OSLO, and either of the British Secretaries will be glad to answer, as far as they can, any further enquiries.

Recent Events

The Editor is not always able to verify information taken from the daily press and other sources and cannot therefore assume responsibility for it.

Forthcoming excavations are hardly ' recent events ', but cannot for that reason be ignored here ; the fault is rather with the inadequate title. Dr Ernest Mackay left England in September for India, to carry out excavations on behalf of the American School of India and Iranian studies and the Boston Museum of Fine Arts, U.S.A.

The site selected is in Sind, at Chanhu-daro, about 80 miles south of Mohenjo-daro. It lies on the eastern bank of the Indus, and is a large (and therefore once important) site. The upper levels appear to be slightly earlier than those of Mohenjo-daro. As the river is *now* some distance away, it is hoped to be able to reach the earliest strata and perhaps find remains of the Amri culture in the lower levels.

This is the first expedition to start work under the new regulations allowing outside bodies to excavate in India ; and we feel sure that, if the Government of India is generous and helpful to the excavators, it will be by no means the last; indeed, if the foolish attitude of some other governments is maintained much longer, it may well follow that the activities of excavators will be deflected eastwards to India, to the loss of the aforesaid foolish ones.

Mr W. B. Kennedy Shaw's explorations in the Libyan Desert were described by him in three articles in *The Times* (6–8 August). Some account of the archaeological discoveries will be published in a later number of ANTIQUITY.

The image of a camel has been found for the first time in a palaeolithic camp at Kostenki, a village in Voronezh province. Prof. N. Y. Efimenko, the Soviet archaeologist, is excavating the site.

The camp was a settlement and was first unearthed in 1701. A dug-out, measuring 50 feet, presumably used for living, has been found adjacent to some big pits. Numerous sculptured objects made of soft stone and mammoth tusks have been revealed. Many of these represent women's figures and animals such as mammoths, cave lions, bears, and now a camel. (*Daily Telegraph*, 29 July).

The excavations which have been carried out by the joint expedition of the Museum of the University of Pennsylvania and the American School of Oriental Research at Tepe Gawra are of great importance. Mr Charles Bache, field director, in a report circulated by Science Service, Washington, D.C., states that he has now reached the level of the twelfth city (counting from above) on the site. This he dates at about 4000 B.C. Exploratory trenches have revealed the existence of eight earlier levels. In the recently discovered twelfth city, which appears to have been destroyed by fire, no trace of metal was found, and it is concluded that the inhabitants were still in the neolithic stage. Its architecture is superior to that of the three cities immediately following. (*Nature*, 27 July).

Dr J. R. Acherley, who has returned to Melbourne from New Guinea, reports the discovery in a limestone cave about 30 miles inland from Salamaua of a shelved mausoleum in which were large numbers of mummies apparently of great age. All the mummies were sitting with their chins on their hands and their elbows on their knees. (*The Times*, 18 July).

A site in the diatomaceous deposit of the Lower Bann Valley was excavated in June 1934 by the Harvard University Archaeological Expedition to Ireland. It lay at the base of an extensive deposit of diatomite where some thirty hearths were discovered. Implements of flint in addition to three polished stone axes were found. Typical

of the industry are pointed flakes with a superficial tanging of the bulbar end. The site never served as a place of permanent habitation, since the hearths show evidence of seasonal floodings by the river. A nearly complete pot from quite near the site has proved to belong to the Windmill Hill family of Neolithic ware, according to Prof. V. G. Childe. The archaeological evidence points to about the beginning of the second millennium B.C. as a rough date for the culture. Such a view is substantiated by Prof. K. Jessen's palaeobotanical studies at the site, and on the basis of his work Late Atlantic to Early Sub-Boreal time is probable. As a whole, the industry seems to be an indigenous North Irish development derived from earlier coastal elements which had come in contact with a fully developed neolithic civilization. (*Nature*, 13 July ; summary of a paper read by H. L. Movius before the Royal Irish Academy, 25 June).

A remarkable find of a mosaic flooring has just been made by Professor G. H. Baxter behind the Mosque of Sultan Ahmed within the area occupied by the Palace of the Byzantine Emperors.

The mosaic, which appears to cover an area of at least 40 square yards, is believed to be contemporary with that uncovered last year by Mr Thomas Whittemore in the narthex of St. Sophia. The work is very delicate and the colouring excellent. The uncovering is being carried out under the personal direction of Professor Baxter, and that part of the floor which has already been cleaned is intact. (*The Times*, 19 July). Since this first announcement more of the mosaic has been disclosed and great results are expected from further excavation. Prof. Baxter has written a lengthy account of the present position for *The Times*, 26 and 28 October, illustrated.

Excavations at the small hill-fort on Shenberrow Hill above Stanton, Gloucestershire are described by Mr J. M. de Navarro in the *Evesham Journal* (3 August). The pottery found pointed to an Iron Age date for the construction of the ramparts ; and the finds made inside ' indicate that Shenberrow was no mere camp of refuge, but a site of settled habitation '.

' One thing is clear, that among the animal bones and teeth, those of the sheep formed a high percentage ; the spindle-whorl shows that

the inhabitants of the camp spun their own wool. One is tempted to think that the medieval sheep-breeding on the Cotswolds had a longer history behind it than heretofore imagined. Air-photography in the neighbourhood followed by excavation may prove the existence of ancient fields ; whether the inhabitants of Shenbarrow Camp ground their own corn is not yet possible to say, but grind corn they did as fragments of quern stones, found during the excavations, show '.

Seven miles almost due south of Shenberrow are the remains of the Notgrove long barrow. Here Mrs E. M. Clifford and her collaboraators have been uncovering a most interesting complex of standing stones and dry stone walling. Near the middle of the long barrow is a circular structure of dry stone walling, called by the excavators ' the Rotunda ', in which human bones were found. The exact interpretation of the remains found is by no means easy and must be left to those engaged on the spot.

Some well-preserved dry stone walling has been uncovered at an entrance to the Iron Age hill-fort of Maiden Castle, near Bickerton, Cheshire (not to be confused with Maiden Castle, Dorset, where too the prehistoric town walls have been uncovered this summer). The work has been carried out by the Rural Community Council (*Manchester Guardian*, 6 September ; illus.).

The skeleton-silhouettes described and illustrated in ANTIQUITY 1933, VII, 470 (plates I, II) have been protected by a shelter erected over them. They can now be seen by any whose inclinations lead them to the province of Emst for holidays or study.

Remains of stone huts have been found at Engaruka, 118 miles west of Arusha, Tanganyika, beyond Lake Mangara. It is said that ' immense stone ramparts and fortifications ' are to be seen, but we

suspect merely remains of terrace-cultivation. Some 40 rock-engravings were also seen. We understand that further investigations are being made. (*East African Standard*, 2 August).

The *Cornish Times* (6 September) asks for information as to the whereabouts of the Rillaton gold cup, which disappeared so mysteriously some years ago. The cup was found in 1837, near the Cheesewring, and passed eventually to Osborne House, Isle of Wight, where it was last heard of. It was exhibited at a meeting of the Royal Archaeological Institute, 7 June 1867. (See article by Edward Smirke, *Arch. Journ.* 1867, XXIV, 189–95 ; and Hencken, *Cornwall*, 1932, pp. 301 for other references). For the last thirty years the cup has been ' lost ' and its hiding place remains unknown in spite of repeated search.

Excavations at Jarlshof, Shetland, were continued last summer, and a large hut-circle, which has a remarkable underground chamber, was uncovered. The chamber is so small (barely 6 feet square and 2 ft. 8 ins. high) that its use as a living room seems hardly possible. Some four miles from Jarlshof, Dr Alex. O. Curle has investigated some ruins which prove to be a primitive iron furnace, with the dwellings of the workers and grave mounds of earth and stone. Some pottery found here was quite distinct from that at Jarlshof, being ' scored with deep grooves, forming chevrons and lozenge patterns '. From report by Dr Curle in *The Scotsman*, and *The Glasgow Herald*, 6 September.

An account of the ruins of Quiriguà, the site of a great Maya civilization, and of the work of the latest expedition of the Carnegie Institution was printed in *Discovery* for September. Among the finds were two finely sculptured altars which date to an early period in Maya history, and a number of unevenly rounded blocks of stone carved to represent animals. One of the latter weighs about 20 tons, and shows a crouching monster with a seated human figure in deep relief in front and a great grotesque mask behind.

An outline of the proceedings of the Congress of the International Association for Iranian Art and Archaeology held at Leningrad was printed in *The Times*, 11 September. In connexion with the Congress an exhibition was arranged to illustrate the influence of Persian art in spheres outside Iran, and an extraordinarily interesting collection was brought together from museums all over Russia. The next Congress will be held in Paris in 1937.

Dun Ruadh, the ancient burial place of Irish kings, in Crock Valley between Cookstown and Gortin, which contained at least thirteen stone cists in its chambers, has been under examination, and the original passages traced and cleared. (*Northern Whig*, 27 September).

In a note on cave-exploration by M. de Joly in *La Nature* (1 August) particulars are given of the Spéléo-Club de France, which has been actively engaged in spaeleological work since its formation in 1930. The members have visited no less than 600 caves, mostly in the Basses-Alpes. M. de Joly also describes the great cave at the foot of the Guadalupe Hills in New Mexico, where a number of enormous chambers were found. In Italy too there has been great activity, about 3000 caves having been explored. (*Nature*, 14 September).

The Presidential Address to Section H of the British Association by Sir Arthur Smith Woodward on ' Recent progress in the study of Man ' forms a valuable resumé of the discoveries associated with Prehistoric Man in the several continents. A summary of the address was given in *Nature*, 14 September.

An expedition of the Moscow State Museum of History has been excavating in the Altai Mountains of Mongolia, where a number of burial-grounds have been found to contain the remains of men and women, together with those of one, two, or more horses. They are said to date from 7th-9th centuries. (*Morning Post*, 16 September).

A very fine example of Hittite art in the form of a silver bull mounted on bronze, and inlaid with gold, has been exhibited in London. One authority dates it as of the third millennium B.C. A description of the figure is given in *The Times*, 16 September.

The remains of a Roman fort have been uncovered at Brampton, where Mr F. G. Simpson and Mr I. A. Richmond have been excavating. The site forms part of Brampton old churchyard. The walls of the western granary show some particularly fine masonry. (*Carlisle Journal*, 13 September).

Chichester City Council proposes to purchase the site of the Roman amphitheatre recently found there and plans for systematic excavation have been made. We congratulate the City Council for its interest in local antiquities, and for encouraging their investigation. (*Sussex Daily News*, 4 October).

Notes on recent archaeological research in Western China, where a good deal of solid work has been accomplished in the last few years, are printed in *Nature*, 31 August.

Interesting results are reported from the excavations at Sheepen Farm site, Colchester, where a 1st century Romano-Celtic temple was discovered. (*The Times*, 10, 28 August, 3 September).

Useful work has been done near Athens by Professor Photiades and other Greek archaeologists at Koumoundouros Hill, halfway between modern Phaleron and the Piraeus. The hill overlooks a small harbour used for yachting and fishing. In the course of digging the foundations for a club-house evidence of ancient remains justify the theory of Professor Photiades that the headland was the site of the

acropolis of King Munychos, and that the yacht-harbour was the ancient port of Phaleron. Details of the excavations, and of some inscriptions, are given in *The Times*, 6 August.

A well-illustrated account of the inscriptions from Tell Duweir (Lachish), found by the Wellcome Archaeological Expedition in the Near East, is written by the Director, Mr J. L. Starkey, in the *Illus. London News* of 10 August. The characters are on a ewer from a temple of the 18th-19th dynasty (1400–1260 B.C.) and the script appears to be connected with those of Ras Shamra. A table is given showing the different forms of the characters used.

Among articles in the *Illus. London News* on recent work in the East are those by Dr Henry Frankfort on discoveries at Tell Asmar and other sites in Iraq (14 September), and the first account (21 September) of the Ishtar-Kititum sanctuary at Ishchali, dating from about 1900 B.C. Among the plaques found are two of the goddess Ishtar-Kititum, one representing her with large necklaces and the other standing in a flounced robe, between two minor gods. A remarkable fragment of a carved stone vase with a figure of a moufflon, and the original inlaid eye, of shell, replaced in the socket, is illustrated.

Illustrations, including an air-photograph, of the Khorsabad site in Iraq, which is being excavated for the Iraq Expedition of the Oriental Institute of Chicago, are given in the *Illus. London News*, 28 September, with a descriptive article by Mr Gordon Loud, the Director. They show the interior decorations, a storage chamber for water, a conduit of the water-supply system, and ivory fragments with designs for decoration.

The excavations which have been in progress since 1933 at the Roman Villa at Rudston, 6 miles west of Bridlington are reported in *The Times*, 22 October. The Villa is assigned to the 3rd century.

An interesting feature is a complex ditch-system which lies under the Roman buildings. One ditch runs north and south below the mosaic pavements and two others approximately east and west. The existence of a pre-Roman construction is confirmed by pottery of a late Iron Age type.

Recent excavations at the Roman fort at Brancaster, conducted by Mr K. St. Joseph, assisted by Mr R. R. Clarke, show that the defences of the fort—which is almost exactly a square of $7\frac{1}{2}$ acres (within the walls)—consisted of a wall $8\frac{1}{2}$ ft. thick with a 20-foot rampart behind, and in front after an intervening berm of some 30 ft., a ditch about 30 ft. wide and 7 or 8 feet deep. The wall was composed of flint, hard chalk rubble and concrete, faced with sandstone blocks ; the rampart of sand and earth, probably mainly the material from the ditch. There are seemingly no bastions ; the corners are turned in simple curves, with internal rectangular corner-turrets. There are central gates in the east and west sides, most probably also in the north and south. The two former apparently had guard-chambers projecting in front of the line of the fort walls.

Though the area and proportions of the fort agree with the Saxon Shore fort type, the style of the defences conforms much more closely to the normal 2nd-century practice. Within the fort two periods were recognized, the later being represented by rough floors of rammed chalk and very rude sandstone walls. The small finds from the make-up of the later floors include material attributable to the early and mid 4th century.

In our last number we published a note on threshing-sledges in Cyprus. We were quite unaware that a very similar note by Mr James Hornell was printed (no. 112) in MAN, for August 1930, and we take this opportunity of thanking him for calling our attention to it, and to express regret for the oversight.

Reviews

THE CELTIC CHURCH IN SCOTLAND : a study of its Penetration Lines and Art Relationships. *By* W. Douglas Simpson. (Aberdeen University Studies no. 111). *Aberdeen University Press*, 1935. *pp.* 120, 25 *figures*, 6 *maps*. 6*s*.

This is a history of the conversion of Pictish Scotland, written from a particular point of view which the author summarizes as follows (pp. 116–7) : ' So far as the Picts of the north-east are concerned . . . this great work was achieved mainly by Britonic and Pictish emissaries from *Candida Casa* of St. Ninian, Bangor of the Irish Picts, Kingarth and Glasgow of the Britons, and their local daughter houses, and not to any major extent by St. Columba and the Scotic Church of Iona '. Dr Simpson allows (p. 68) that the documentary evidence for the history of these early missionaries is exceedingly meagre and often centuries later than their time, but in view of this he has devised an ingenious alternative method of enquiry. It is well known that early Celtic churches and monasteries were as a rule called by the name of their real founder or of his own monastic patron, and the author believes that by plotting distribution-maps of such ecclesiastical sites the movements of the missionary who founded them can be traced and his starting point determined. By this means he shows that the conversion of the whole of Pictish Scotland was the work of Ninian and his successors at Whithorn, and of Irishmen from monasteries founded in Ireland by his disciples, and that St. Columba's fame as ' apostle to the Picts ' has been grossly and often deliberately exaggerated. He treats the whole movement as one ultimately derived from and inspired by Roman Britain and the Roman church, converting pagans and strengthening Christians in a Scotland already very largely Romanized by contact with the British province ; and supports it (chap. 8) by his theory that the equal-armed crosses of east Pictland (as well as the Anglian crosses of the round non-wheel head type[1]) were evolved at Whithorn out of the early Chi-Rho cross and that the design was carried with them northwards by the Ninianic missionaries.

All this forms an interesting and stimulating hypothesis which Dr Simpson propounds with much learning and a studied impartiality. Unfortunately historians, archaeologists, and students of philology and literature will find a good deal to object to in his interpretation of the evidence.

Dr Simpson is right to stress the fact of Roman trade contacts with barbarian Scotland, but he goes too far in this. The tendency of recent archaeological research has been on the contrary to emphasize that much which was native and Celtic survived the Roman occupation of Britain and that the ' Romanization ' school had overstated its case ; the author's archaeology dates back to Haverfield. Treating Ninian as an emissary of Rome to the (supposed) Romanized communities of Scotland and his mission as a deliberate piece of Roman policy, he would show that the foundations of Ninian coincide with the known Roman sites and sphere of influence in Scotland, and that too because he was a Roman working among quasi-Roman people. Actually the first thing that strikes one about Dr Simpson's distribution-map (fig. 1) is that out of the eight Ninianic foundations marked only *one* is closely associated with a Roman context and

[1] e.g. those figured in Collingwood's *Northumbrian Crosses*, p. 64.

three are very conspicuously far away from anything of the kind. The rest are ranged along much the same strip of country as that followed by Agricola's road, and doubtless for the very good reason that geographical considerations make it the one natural line of penetration towards the north. Dr Simpson half realizes this: 'Christian missions into Pictland tended to follow a well defined strategic route, dictated by the fundamental and inevitable geographical conditions' (p. 77). Distribution-maps can be tricky things. For example, 'that St. Donnan commenced his journey from *Candida Casa* is nowhere stated by any ancient author, but it is rendered exceedingly probable by the range of his churches . . . which . . . exactly follow the footsteps of St. Ninian' (p. 66). Reference to the map (fig. 9) shows that foundations named after Donnan are concentrated down the western coasts and the islands, with the exception of one on the line of the Caledonian Canal, one in east Sutherland, and one in northeast Aberdeenshire. This suggests rather that Donnan's journeyings were all by sea, with perhaps one excursion up to Inverness and the northeast, and 'exactly follow the footsteps of St. Ninian' is hardly an accurate description. But what evidence does this or any other 'track chart of the saints' (p. 66) give us of where the saint started from and where he finished? As for the attack upon Columba, the author repeats the arguments from his *The Historical St. Columba*, and one need only refer to Professor Watson's criticisms of that book,[2] criticisms which are not satisfactorily answered here.

There are certain other assumptions which cannot pass unchallenged. Ninian may have been a Roman Briton and Whithorn an offshoot of the Roman church, but it is a little strange to claim that the later Irish missionaries to the Picts from monasteries founded by Ninian's disciples in Ireland generations before, were any more Romanizing than Columba himself. One notes too implied the utterly unfounded suppositions that Irishmen of so-called *Cruithne* descent were in some way more acceptable to the Picts of Scotland than any other Irishmen, and that they spoke and understood the Pictish language. For the theory that the late cross-types derive from the Whithorn Chi-Rho monogram, the unbridged gap of hundreds of years between is a serious objection; but in general there are some interesting observations in this chapter on crosses.

The least satisfactory part of the book is the account of the post-Roman period in Britain, because Dr Simpson has been content to accept the theories of obsolete and often very untrustworthy authorities such as Skene, Nicholson, and Rhys, without examining the evidence more closely. He clearly has no acquaintance at first hand with the Celtic languages and their literatures. It is not good enough to excuse oneself on the plea made by Haverfield in 1907 that Celtic philology is in a state of chaos and is 'no place for a respectable historian' (p. 7). If that was true in Haverfield's time it has long since ceased to be so, and on the contrary it is the business of a 'respectable' Celtic historian to master the languages so that he can use their testimony with understanding. Thus his treatment of Cunedda is quite unsound, based partly on Rhys's misunderstandings of a poem in the Book of Taliessin—there is of course nothing to show that Cunedda 'had his headquarters at Carlisle', that 'he is represented as wearing . . . the special badge of a Roman *Dux*', or that his son Ceredig was the same person as Ceredig Wledig of Strathclyde (!); these things are unfounded speculations. The same applies to much of the section on Rhydderch Hael and the battle of Arfderydd, pp. 85–6. Again, the author ignores the Gododdin poems and makes some strange statements about the Otadini in consequence (p. 62). The passages on the Saxon invasions and settlement (pp. 74–5, 102–5) leave much to be desired.

[2] *Aberdeen University Review*, vol. 15.

Finally, some individual points. The following bastard forms: Eddi for Eddius or Aedde, Maglocune for Maglocunus or Maelgwn, Hy Niall for Uí Néill, Gwenddolew for Gwenddoleu, Keledei for Céili Dé (p. 116; *Céile* does not mean 'servant' in this phrase, but 'vassal'). *Tóthail* (p. 61) *is* Irish; it is the genitive singular (after *filius*) of Tóthal, the archaic form, contemporary with Adamnan, of the later Tuathal. P. 67, note 2, it is correct that the Martyrology of Oengus was composed about 800, but *not* that the notes to it were; hence the story of Donnan's death is even less likely to be true. P. 102, there may very probably have been an 'Artorius, *Dux Bellorum*', but it is only a hypothesis. P. 62, note 1, a case of wrong reference—for Cymmrodorion Soc. read Y Cymmrodor, vol. XXI, 63–104.

Dr Simpson's views on the conversion of the Picts would be more authoritative if we could feel sure that they are not influenced—absolutely unconsciously of course—by that pro-Pictish feeling, anti-Gaelic and anti-Saxon, which is apt to distort the outlook of modern 'Pictish' writers. Yet cautious speculation has its value, and the book is well worth reading for that reason. KENNETH JACKSON.

THE STORY OF BITUMEN. Published by SHELL. *pp.* 63 *and* 37 *illus. No date, place of publication, or price.*

AUS DER ÄLTESTEN GESCHICHTE DES BITUMENS. *By* R. J. FORBES, Amsterdam. Extract from BITUMEN. *Berlin*, 1934. *pp.* 15 *and* 19 *illus.*

These two papers are apparently by the same author and cover the same ground, using the same illustrations. They record the history of bitumen from the earliest times, with all the existing ancient references from Greek and Roman authors and all possible archaeological illustrations. In effect the compilation is one which will be of great use to archaeologists, for it contains all relevant material set out in precise and convenient form. The medieval section is also full and instructive. The use of bitumen for damp courses in reservoirs and cisterns in India at Mohenjo-daro and in Mesopotamia at various periods, its use for bonding bricks in Babylon, and at Ur as a backing for mosaic are among its more important archaeological purposes. The author gives a most useful and well-documented account of 'Greek Fire' which was a preparation based on a secret formula which produced a self-igniting mixture of petroleum and quicklime. The invention passed from Byzantines to Arabs and thence in the 8th century to the Chinese.

The Mongols employed small balloons filled with hot air produced by petroleum lamps. These balloons were the true predecessors of Montgolfier's balloon, though by the Mongols they were used solely for signal purposes. S. CASSON.

THE STONE AGE RACES OF KENYA. *By* L. S. B. LEAKEY. *Oxford University Press*, 1935. *pp.* VII, 145, 37 *plates*, 52 *figures, map and* 6 *appendices.* £1 18*s.*

This work is an outcome of the labours of the East African Archaeological Expedition (seasons 1926, 1928 and 1931) and except for its greater size and larger bulk, the volume is in every way a companion to *The Stone Age Cultures of Kenya Colony* by the same author. It is a remarkable book, and the name of the publishers is sufficient guarantee of excellent production. It is almost lavishly illustrated, thus serving admirably to support and elucidate its title.

As it must find a place on the shelves of libraries to which specialists in human osteology, prehistoric anthropology and kindred subjects repair for purposes of study

and reference, its high price, which puts it beyond the purchasing ability of most students, is less of a drawback than it might at first appear. But it is a very great pity that the most remarkable and interesting of the relics found by Dr Leakey and his co-workers, described in such detail in this volume—the Kanjera and Kanam human remains—must be dethroned from their unique positions, the one as the earliest of all *Homo sapiens* and the other as an amazingly ancient *sapiens*-like *Homo*, because judgment with regard to their geological age must be held in suspense. (*Nature*, 9 March 1935, p. 371). It is safe to say, however, that neither is modern, and judging by the nature and degree of its mineralization the Kanam mandible is decidedly ancient. A discussion of anatomical details would be out of place in ANTIQUITY, but those who wish to know the considered views of a leader in the study of prehistoric anthropology in the present connexion will do well to turn to the pages of *Nature* (2 Feb. 1935, p. 163).

The author does not, however, confine himself in this volume to anatomy. Dr Leakey sets forth his view with regard to Pleistocene climates and topographical changes in Eastern Africa, and it is essentially to him that we are indebted for our knowledge of post-pluvial (post-Würmian ?) climatic phases in Kenya.

It has been shown that there were two main pluvial periods in Eastern Africa during the Pleistocene followed by a relatively dry spell, and then came a moist period (the Makalian), another dry spell and then a moist one again (the Nakuran), and Dr Leakey is able to tell us much concerning the peoples who experienced the humanly important climatic changes from Upper Pleistocene to Neolithic times in Kenya.

Dr Leakey calls the first pluvial the Kamasian and the second the Gamblian. According to one interpretation, however, his Kamasian includes the first part of the second pluvial as well as all of the first. But in addition to meteorological vicissitudes, the Pleistocene of Eastern and Central Africa has witnessed very important changes of topography consequent upon movements of the earth's crust and, in Kenya, vast volcanic outpourings.

It is not clear, however, what Dr Leakey means by ' volcanic upheavals ', nor by ' earth movements of a less magnitude ' which, it is stated ' have occurred from time to time, chiefly as *a result of* the settling down of the disturbed deposits ' (the italics are mine). Nor will everyone agree that ' ice sheets extended to all levels over two thousand feet ' and that ' in order to explain the ice-sheets we have to postulate that there are periods of increased precipitation *combined with a lowering of temperature* ' (again the italics are mine).

Dr Leakey has something to say about the effects of present-day climatic conditions and states that ' erosion in the Kanam-Kanjera area is going on at present at an incredible pace ', but comparison of photographs taken a few years ago with the ground they depicted does not support this view.

Dr Leakey is hardly correct when he states ' I have also shown that the lowering of the lake [Victoria] was due to the formation of the outlet at Jinja, as a result of earth-movements. Once the Jinja outlet had been formed the lake could never rise appreciably again, no matter how great the increase of rainfall '. None-the-less it did !

According to the evidence, as we now know it, the Jinja outlet was formed not at ' the end of the Kamasian Pluvial period ' but long before that, and the level of Lake Victoria was controlled not by that outlet but by the original discharge channel which was the Kafu valley. Late in Pluvial II times, however, this drainage was diverted along the present lower Victoria Nile and reversal and accelerated erosion along the new course and rejuvenation along the Upper Victoria Nile, downstream of Jinja, started.

It is a pity that the map at the end of the volume is so out of date and that the remarkable drainage systems of Uganda so obviously (when rightly depicted) and so intimately bound up with the history of Lake Victoria are so inadequately and/or wrongly shown, for they provide the first clue to the remarkable physiographic history of Eastern Central Africa during the Pleistocene. These criticisms, however, hardly detract from the value of the book as a fitting record of some very remarkable researches and discoveries which have opened up a new chapter in the story of Stone-Age peoples. It is a record, moreover, which no prehistorian can afford to neglect. E. J. WAYLAND.

THE CONSTITUTIONAL HISTORY OF THE CINQUE PORTS. *By* K. M. E. MURRAY. (Publications of the University of Manchester, CCXXXV, Historical Series, LXVIII). *pp.* XVI, 282 *and map. Manchester University Press*, 1935. 10*s* 6*d.*

The Cinque Ports have long deserved a history that shall do more for them than Montague Burrows could have done, and at last they have got it. True, it is a Constitutional History ; but Miss Murray has refused to be too orthodox in her definitions and the result is a fairly general and generous survey of this cluster of federated towns. Yet it is more than a mere survey. This solid and handsome volume, which is likely to be the standard work on the Cinque Ports for many years to come, has been built up on a thorough-going scrutiny of the original documents and a shrewd appraisement of their content and implications. The author's arrangement of her material is well planned and the style is distinguished, fluent and worthy of her subject.

For those who take the romantic view of the Cinque Ports, or who have been brought up on Burrows, there will be some disappointment. Miss Murray's book has undoubtedly the effect of diminishing our sense of the historical importance of the Five Ports, the two Ancient Towns, and their Corporate and non-Corporate Members, either as individuals or a confederation. Nevertheless, she is correct in deciding that their part in naval affairs has been over-estimated, their liberties exaggerated, and the origins of their joint organization considerably ante-dated.

The status of the Cinque Ports as a federation of towns—the only example in Britain—was not that of a self-contained and independent unit. Its Courts of Shepway and Brodhull, though possessed of special privileges and powers, were not immune from outside interference. They certainly helped to bind the towns and barons more closely together, and the Brodhull was, from 1357 at any rate, the general assembly of the Cinque Ports. On the other hand, the very existence of the Court of Guestling is a proof of the looseness of the confederation and of the tendency of the Ports to separate into county groups. The office of Warden of the Cinque Ports, though a position of great profit and prestige, was not the kind of small sovereignty that tradition asserts it to have been. Holding his commission at the king's pleasure, the warden was also bound by oath to uphold the liberties of the Cinque Ports ; thus being nicely maintained in an equipoise between the two. In the 13th century the Cinque Ports were vital to England; in the 14th, their services were of value ; after that came the decline.

If the above appears to be a summary of negations, the book is a great deal more than that. While traversing the questionable arguments and assumptions of the older historians, it covers the whole ground of the Cinque Ports constitution. In order to do so, it has had to forego the consideration of some aspects of their history that are always of a lively interest. The details of naval achievements ; the identification of the sites of Shepway and Brodhull ; discussions on the absence of a common seal, the origin of

the common flag, and the heraldry of the common arms—these, however welcome, would have been gratuitous in a Constitutional History.

It is a pleasure to handle a volume so well printed and bound, and with so good an index. The fact that a few slight discrepancies of punctuation (see pp. 83, 127, 134 and 136) have caught the eye is really a tribute to the excellence of the proof-reading.

FRAZER HEARNE.

SLEDGES AND WHEELED VEHICLES : ethnological studies from the view-point of Sweden. (Nordiska Museets Handlingar : 4). *By* GÖSTA BERG. *Uppsala : Almqvist and Wiksells Boktryckeri-A-B*, 1935. *pp.* 189, 32 *plates*, 38 *drawings*, 13 *distribution maps. Price not stated.*

' The object of this work ', says its author, ' is to investigate problems connected with the history of vehicular transport from a Swedish point of view '. But, though he is thus an avowed specialist, he never loses sight of the two facts, that Swedish transport is part of the world's transport, and that vehicles are historically important because they are an essential part of the culture of their users. He is to be congratulated on treating studies of vehicles as the ethnological studies that they certainly are.

Besides dealing very fully with what may be called the ' normal ' stages of slide-car, sledge, wheeled-sledge, cart and waggon, he produces evidence of a pre-sledge era of single runners dating back to neolithic times ; and he also devotes much attention to the difference between the pair-drawn and the single-draught forms of cart. Much that is said bears on points that have been already raised in ANTIQUITY.

The vast wealth of evidence accumulated in this book forms in itself a permanent and valuable contribution to the literature of the subject. The plates provide nearly a hundred good photographs and reproductions. The drawings are excellent, but the value of the distribution-maps would be increased if we were told more about the methods by which they were drawn up, and if the symbols in some of them were more clearly explained. A minor defect is that several illustrations are wrongly numbered in the text.

Such theories as are expressed are, wisely, somewhat tentative. The author recognizes, as all must who tackle this subject seriously, that both wider and more thorough researches are needed before a complete statement can be made with any approach to certainty. He does, however, commit himself to the unqualified opinion that the single-horse cart had its origin in the slide-car. More often he plays the part of the research-worker, with a patience and thoroughness which compel admiration.

It must be recognized that the translator had to deal with an extremely difficult task. But this does not alter the fact that the English reader is faced by obvious mis-translations in several rather important passages ; these not only baffle him in themselves, but also raise uncomfortable doubts about the accuracy of other passages. The sum total of these errors and possible errors is, however, only a small fraction of the whole.

The paper and print are good, and the book, when opened, lies flat. This is helpful to the reader, particularly in a volume which one is likely to wish to leave open for comparison with others. A bibliography of the subject occupies 17 pages.

There is no doubt that this book will be of great value to anyone seriously interested in the history of transport. It will provide English readers with information that they are not likely to be able to get for themselves. It is to be hoped that someone will produce a similar book, dealing with these matters from ' the view-point of Great Britain '.

R. H. LANE.

CORPUS VASORUM ANTIQUORUM. United States of America. Providence: Museum of the Rhode Island School of Design. Fascicule I. *By* Stephen Bleecker Luce. *pp.* 50 *and* 31 *plates.* 20s.

University of Michigan. Fascicule I. *By* Wilhelmina van Ingen. *pp.* 84 *and* 48 *plates.* 20s.

The Robinson Collection, Baltimore. Fascicule I. *By* David Moore Robinson. *pp.* 58 *and* 48 *plates*, 9 *text-figures.* 35*s.*
Harvard Univ. Press and Oxford Univ. Press, 1933–4.

These three volumes of the ceramic Corpus are a notable contribution to this great international undertaking. The Rhode Island collection comprises a good working selection of Mediterranean pottery of all types. Egyptian prehistoric and historic wares are well represented and the single example of Mesopotamian ware from the Tigris-Euphrates basin is of a type not often seen in European or American museums. Cypriote ceramic is very poorly represented and there is little Mycenaean. The main strength of the collection lies in Attic wares of the finest periods. Twenty-five vases from the Warren collection purchased in 1925 increase the value of the Attic section. Indeed Providence can show both the eponymous vase of the 'Providence painter' (as might be expected) and a good half-dozen first rate examples of the work of the leading Attic painters. Corinthian pottery is poorly represented and proto-Corinthian a lacuna, but a lovely Rhodian orientalizing oenochoe and a Chalcidian oenochoe fill what would otherwise be serious gaps in the whole series. The Dipylon group of five vessels is well above the average in quality.

Of the Attic wares the early amphora with two confronted male figures in a spacious field shows the admirable restraint of the first attempts of Attic painters of genius. The Nikosthenes amphora (pl. 9), signed by the artist, is one of the finest vases in America; its shoulder-frieze of horsemen and standing figures shows the same reserve and balance as in the preceding vase but has in addition the added glory of a superb architectural design on the main body of the vase. The column-crater on pl. 11 shows the work of two quite different painters on the two sides: the small lekythos with the lovely rendering of Europa and the Bull is far above the level of small work in black-figure.

Among the red-figure vases we have a new attribution by Mr Luce of a fine Nolan amphora to the Nikon Painter (pl. 13, 1a) and another to the circle of the Dionokles Painter. Two lekythi showing Danae in the chest and a potter firing a vase in a kiln are of unusual subject-interest (pl. 17). The amphora which gives its name to the Providence Painter shows one of the stateliest representations of Apollo with his cithara to be found in Greek vase-painting. A small lekythos (pl. 19, 2) seems to be also a work of this painter, and the Brygos lekythos showing a seated Hera is of the same high level of execution as the preceding works. The white lekythi are poor in quality and the example illustrated in the coloured plate hardly deserves that honour.

The Michigan collection, in contrast, is wholly undistinguished, but is a useful collection for students. It contains no work of any kind of artistic merit, but well illustrates the daily wares of the ancients, from protodynastic Egyptian times down to the days of Roman Gaul. A group of Ptolemaic faience will be useful for students of these ornamental wares and their later derivatives, and a small group of Yortan vases gives a ware otherwise hardly seen in American museums. A very odd fragment (pl. 4, 5) from Pisidian Antioch shows a unique design in Mycenaean ware. It may well come into its own when more micrasiatic sites are excavated: at present it stands alone. A

fine Cypriote series covers the Bronze and Iron Ages but stops short of the orientalizing period. The Attic wares are poor indeed, but some black figure-vases have merit.

The Robinson collection is well above the average of the Michigan in quality and is an admirable record of the careful search on the part of one collector, whose intention was to make a good representative series for students that maintained a high artistic standard. The high spots of the collection are to be found in the lovely Attic white-ground pyxis, perhaps by the Penthesilea Painter (who is now well represented in America), in an unusually good white lekythos by the otherwise dull Painter of the Bowdoin Box, and in a black-figure hydria by the Acheloos Painter. A group of Thessalian sherds and a group of Panathenaic vases of the third quarter of the 5th century are of historical value for students ; the latter in particular, since they help to enlarge our knowledge of this archaizing series of works of art. The combination of an archaistic Athena and athletes who are non-archaic is a strange amalgam. Their date cannot be so easily fixed as Prof. Robinson would suppose. A rectangular altar from Skione is an interesting extra ; whether it is an actual portable altar or a mere base for a small statue is uncertain. It should be compared with a recently found 'altar' of the same type from Corinth. The figure of a silene painted on one side is good work.

The series of white lekythi are mostly of the late and sentimental period and cannot rank as more than pleasant ornaments. Beautiful white lekythi are few and far between.

S. Casson.

CATALOGUE OF ANTIQUITIES IN THE MUSEUM OF THE WILTSHIRE ARCHAEOLOGICAL AND NATURAL HISTORY SOCIETY AT DEVIZES. Part II, 2nd edition. *Compiled by* Mrs M. E. Cunnington *and the* Rev. Canon E. H. Goddard. *Published by the Society at the Museum, Devizes*, 1934. (*George Simpson, Devizes*). *pp.* xiv, 294, 92 *plates and* 46 *illus.* 2*s* 6*d* (*postage* 6*d*).

Those who have a knowledge of the previous works of the compilers of this Catalogue, including the first edition thereof, will not be surprised to learn that the second edition is a first-class production. Though modestly entitled a Catalogue, it is in reality far more than that ; it is a mine of information for anyone interested in the science of archaeology, apart from its value to a visitor to the Devizes Museum, and it should be in the library of every archaeological student.

It deals with all the antiquities in the Museum, with the exception of those included in the Stourhead Collection, of which there is a separate catalogue, part I. The first 256 pages are concerned with the specimens dating from 'Eolithic' times to the Christian-Saxon period ; the remaining pages deal with objects of Medieval and later date, and with certain miscellaneous exhibits and models. There is a short addendum.

It is well known that Wiltshire excels any other county in the British Isles as regards the number of its barrows, long and round ; it is therefore not surprising that the Devizes Museum is exceptionally well furnished with grave-goods of the Neolithic and Bronze Ages, which are thoroughly well described in the catalogue. The objects from the many Iron Age habitation-sites and earthworks have their full share of notice, and there is a very adequate description of the Roman and British antiquities.

A feature of the Catalogue is the excellent, concise accounts of the excavations which furnished collections of objects from particular sites. The general arrangement leaves nothing to be desired, and the plates and illustrations are very clear and useful. Last, but by no means least, there is an excellent index, so that there is no loss of time in obtaining all the information that is available on any object in the Catalogue. A. Shaw Mellor.

THE VICTORIA HISTORY OF THE COUNTY OF RUTLAND : Vol. II. *Edited by the late* WILLIAM PAGE. *London : St. Catherine Press, Stamford Street*, 1935. *pp.* XLIV, 284 *with plates and text-illustrations.* 63*s.*

This volume, the ninety-third of the series, completes (except for the index-supplement) the survey of England's smallest county, and it may be said at once that it fully maintains the high standard already set for this work. Moreover, it possesses a special interest for many readers in that it represents the last volume issued under the general editorship of the late Dr William Page, F.S.A., an admirable memoir of whom, from the pen of Sir Charles Peers, is included therein, together with a portrait. The present volume is concerned with the topography of the county and contains a large amount of valuable and well-ordered information on each hundred and parish within it, representing the results of much patient research on the part of Dr Page's staff of helpers. The descriptions of the parish churches have been undertaken by Mr F. H. Cheetham, F.S.A., who has carried out his task with commendable care and thoroughness, while the later domestic buildings and the heraldry of the county have been dealt with by two acknowledged masters of their subjects, Mr J. A. Gotch, F.S.A., and the Rev. E. E. Dorling, F.S.A. A word of special appreciation is due to Miss Jamison, who is responsible for the introduction. Here, in some 16 pages, she has succeeded in giving a really excellent summary of the more important material contained in the succeeding sections and thus provides the general reader with some idea of what Michael Drayton calls ' the rarities that Rutland shows '. (*Polyolbion*). The illustrations in the volume are uniformly good.

V. B. CROWTHER-BEYNON.

ATTIC VASE-PAINTING. Martin Classical Lectures, vol. III. *By* C. T. SELTMAN. *Harvard University Press*, 1933. *pp.* 89 *and* 37 *plates.* $1.50.

The cheap price of the series issued by this Foundation is much to be commended. I know of no archaeological work of such merit which has been issued in any country at so low a price. The Martin Foundation is carrying out its trust faithfully.

Mr Seltman writes a most lucid and instructive book. After a preliminary discussion on art in general and Greek art in particular, in which he clears the air of many obscurities, he warns us briefly that the popular idea of Greek art is moulded on ' fleshy female types like the Venus de Milo or monsters like the Laocoon ' and then proceeds with his exposition. His account of Geometric art, which he calls 'of a textile type', is clear and correct. Geometric art may have been Dorian in inspiration but the Attic artist gave it a quality which made it into something ' overwhelmingly impressive '. The next phase, about 600 B.C., is that in which we see Attica ' despite political insignificance, asserting in art an unconscious claim to the spiritual leadership of Greece '. Soon Attic wares became world-famous as works of art, not as receptacles of merchandise— ' Chinese vases did not come to 17th century Europe because the Europeans had a passion for ginger and lycgees, but because Ming was better than Majolica '. And so Mr Seltman enters the field of individual painters and potters whose styles are fully known. He describes their characteristics and their artistic connexions and makes a simple story out of a maze of facts which the student often finds it hard to assimilate. Nor does he forget to explain the development of painting on vases in relation to the development of the major arts. He pursues his subject to its end and describes the vulgarianism of Meidias and Aristophanes, the last of the vase painters, before the art perished for good, before the fifth century had ended.

Mr Seltman is to be congratulated on a book which in small compass covers the whole ground with precision and simplicity. His illustrations are above reproach. His date for the introduction of orientalizing influences is perhaps too late : his suggestion that the *kantharoi* depicted on vase paintings are probably of metal can now be well illustrated by the two superb silver *kantharoi* found in Bulgaria. There is little else to criticize and to add to a work thus competently achieved. S. CASSON.

ESSAYS IN CORNISH HISTORY. *By* CHARLES HENDERSON. *Edited by* A. L. ROWSE *and* M. I. HENDERSON. *Oxford : Clarendon Press*, 1935. *pp.* XXIV, 241. 12*s* 6*d*.

By the untimely death of Charles Henderson, Cornwall—and England—has lost one who could have done great things. For Henderson stood in the direct line of succession to the great old county historians ; he was of the company of Colt Hoare, Hutchins and Hasted. It is a great tragedy that, instead of the great History of Cornwall which he designed to write, there should remain for posterity merely these essays, described by one of the editors as ' the bare stuff of his knowledge, not its final construction. His 16,000 ancient documents now lie in the Museum at Truro with many hundred transcripts of his hand, the bequest of a notable historian, but still a mere dump of material'. . . . ' There the artillery will lie. But who now can bend his bow ' ? says Sir Arthur Quiller-Couch, in a charming and adequate preface.

But fragmentary though they are, these essays are of golden quality. They reveal the sure touch of the master-craftsman. Whether he was describing the borough records of Truro or Cornish place-names or the gardens, deer-parks, ferries, inns, wrecks and light-houses, bells, crosses or old estate-maps of Cornwall, Henderson gave life to the dry bones of the past. And why ? For two main reasons ; primarily because he always wrote from first-hand knowledge of deeds or land, but also because he was not merely an indoor student (though he was that in full measure). He knew and loved the land of Cornwall, its windy moors and coasts, and its wooded combes ; he was a born topographer and field-worker, and related his knowledge of written documents to the land itself. Moreover, the past in which he lived was a real thing ; it was the Cornwall he knew, transformed by the magic touch of an informed, historical imagination. Such talent is rare, and the legacy here bequeathed to the public will be read with genuine, if regretful, pleasure by all who care for true scholarship. O.G.S.C.

FOUILLES DE TELLOH : sous la direction de H. de Genouillac. Tome I. Epoques Présargoniques. *Paris : Geuthner*, 1934. *Tomes* I–II, 300 *frs*.

' C'est Telloh qui nous a révélé les Sumériens '. These are M. de Genouillac's first words in his preface, and they are a fitting tribute to the magnificent work done by the French for the last half-century on this Mesopotamian site, begun by De Sarzec, and carried on by numerous other distinguished *savants*. Since 1929 the expedition has been under the control of M. de Genouillac, and he has now reached a level fourteen metres below that of De Sarzec's work on the buildings of Entemena. His finds are, as would be expected, similar to those made in other prehistoric strata in the neighbourhood : but although the remains at water level are of the same kind as those found by Woolley at Ur, no ' Flood ' has been revealed. This is a curious hiatus (it was equally so at Warka), since Watelin has maintained the existence of a ' Flood ' at Kish, in addition to Woolley's at Ur.

It is, of course, to the painted pottery to which our attention is naturally turned at the outset, and I see that M. de Genouillac supports the theory which I held when finding the black-painted ware at Abu Shahrain in 1918, that it is not Sumerian. I confess to being still of the same opinion : I cannot see how it can be possible for those near neighbours of the Sumerians, the Ninevites, to show such a quantity of the black-painted ware which can be brought into relation with much of that found on Sumerian sites (that is to say, Nin. 4 and 5), and yet practically nothing to show a connexion with the Sumerians in art or language. At Nineveh there are no native Sumerian brick inscriptions to show Sumerian occupation, and the very rare Sumerian objects may well have been due to trading.

With these ' finds ' from Telloh the prehistoric archaeologist has now another collection of pottery for his consideration, and he will find it admirably catalogued and photographed herein. They do not, perhaps, reveal anything of very new and popular interest, but among them there is one outstanding fragment of potsherd with an unusual incised drawing of a man of the period. It is, perhaps, a little difficult to sympathize with the words *coup de poing* in association with a specimen of the numerous stone hoes which are always found on these sites, and the learned author trips once in saying ' l'homme de la céramique peinte . . . ne figure point de dieux ni de démons comme des hommes '. He will find a wonderful picture of a headless vampire on a bowl from Moussian (*Délég. en Perse*, VIII, 136, fig. 266) where the sufferer, who has been visited by night by the succuba, shows what will happen to her if she return ; and this queer superstition is shown on later seals (e.g., *Liv. Annals*, XIX, pl. LXIII, no. 1, and *Rev. d'Assyr.*, 1909, 61). These latter points are, however, trivial criticisms to make on a publication so admirably edited and produced, after what must have been great labours in the field.

R. CAMPBELL THOMPSON.

ORIGINS AND DEVELOPMENT OF APPLIED CHEMISTRY. *By* J. R. PARTINGTON. *Longmans, Green & Co.*, 1935. *pp.* XII *and* 597. 45*s.*

It is not often that a reviewer completes his review with the feeling that the book reviewed is, of its type, as complete, comprehensive and accurate as a book can be. This book has all three virtues and many more. It is, in effect, a massive encyclopaedia written by one person upon the vast topic of the history of material substances used by man. As such it is and will remain for a generation an essential handbook for every archaeologist. Indeed it will contribute largely to the improvement of archaeological method and research, for it does what no archaeologist can do by himself—correlates the material from various regions and discusses it from the standpoint of an expert professional chemist. The book is by no means a mere collection of data relating to material substances from excavations ; it is far more than that. The author systematically covers the whole of the Old World. Egypt, Babylonia, Crete, Troy and Cyprus, Asia Minor, Greece, Persia, Phoenicia and Palestine are dealt with in turn. Each section is preceded by a condensed and admirably clear historical exposition of the area and its inhabitants. Then follows a discussion of the minerals, metals, and other inorganic substances of which we have knowledge either from excavation or from literary sources, and then of the organic substances used in industry. An account of every technical process of which knowledge survives or can be reconstructed from the extant remains is also included. The reader thus soon discovers that he has in his hands a history of the ancient world down to the end of the Bronze Age written solely from the point of view of one who is concerned with the materials used by man. The title of

the book might well be *Materia Archaeologica*. The 529 closely packed pages of small type and the 25,000 footnote references are so well arranged typographically that the publisher has contrived to contain within one not too heavy volume what one would have expected to see emerge as half a dozen smaller volumes. Consequently the archaeologist in the field will be able to convey this book with the minimum of inconvenience and the maximum of benefit. The system of footnote abbreviations is excellent and the use of the index as a bibliography a very space-saving device. When we read in the preface that the book was compiled ' in the spare time of one person, not particularly well equipped ' one feels that one is at last in the presence of a real example of the twin virtues Modesty and Industry.

It is impossible in this review to do more than indicate the principal merits and the particular passages that struck the reviewer. Throughout the book the standard of accuracy is astonishing: only one misprint was noticed. The author assures us that he has personally consulted each of the thousands of footnote references, an assurance which one would like to see made in many books.

The Egyptian section is naturally the fullest. The author raises (p. 22) the important topic of how metals were in the first place discovered ; gives the fullest information as to gold mining in ancient Nubia (p. 33) and from a fresh angle attacks the archaeological myth of Transylvanian gold already dealt with by Lucas (see ANTIQUITY, June 1935, p. 238). Apparently the original thesis that ' antimony will combine with gold only in the presence of tellurium ' is chemically incorrect. His account of the use and provision of tin is of the greatest value (p. 77). The existence of rich deposits of tin near Meshed is apparently well-documented but has not yet been fully confirmed by any recent authoritative statement. Obviously, confirmation of these deposits will affect much recent controversy and provide final evidence for a restatement of the problems that concern tin supplies in the ancient East. The problem of the manufacture of steel (p. 95) is discussed. There was apparently no inherent difficulty in transforming bar-iron into steel even for primitive people. All that was needed was a proper understanding of the use of charcoal, aided by nitrogenous organic matter, and tempering. This was no insuperable task for simple smiths. The author rapidly disposes of another archaeological myth—the alleged early use of iron or secretly hardened copper, inferred from the Egyptian facility for working exceedingly hard stones. ' Abrasive powders and almost infinite patience were ' he says, ' probably the agents employed '. The facts that experiments by modern workmen on the same lines have not produced the same results is, he argues, merely proof that the processes can only be effectively carried out by men who have a tradition of centuries of such work behind them.

The reader will discover from time to time in this mine of learned information occasional gems of unusual knowledge. Thus there is obsidian in Abyssinia (p. 103) as well as in Melos and Asia Minor. One learns with surprise that the first analysis of ' Egyptian Blue ' was made by Sir Humphry Davy in 1815 and that it remains ' a model for all investigations of this type ' (p. 117). A full discussion of Manna gives the last word on this strange substance (p. 162).

The Babylonian section is completely up to date and most valuable. An attempt is made to identify the ancient names for various minerals and there is a complete list of the materials from Ur. The section on Crete and the Mycenaean world is equally full. The author gives a notable correction of an analysis of Minoan faience which has been hopelessly garbled and rendered ' chemically almost unintelligible ' by the archaeologists (p. 328), and shows that a piece of ' iron ' found at Phaestos is in fact unsmelted

magnetite (p. 336). To the universal surprise of archaeologists the author records that he ' can find no record of the use of saffron as a dye ' (p. 337). Probably the safflower was used instead. The white ' Chinese ' jade of Troy is shown to be of local origin (p. 342) and the author comments on the discordant analyses of bronze at Troy.

The Hittite section is particularly admirable. The historical introduction is as clear a statement of Hittite problems as can be found and the authorities consulted seem to be the best and the most recent.

The origins of Persian gold-supply is discussed with a wealth of information (p. 402) and the author's suggestion that the legendary ' ants ' who protected the gold are to be identified with the fierce mastiffs which the miners of Dardistan still employ seems acceptable.

On one solitary topic alone does the author mount his hobby horse. He restates in full the case for Phoenician trade in tin with Britain. But his arguments are purely speculative and his case, though admirably stated, does not convince. It is the volume rather than the existence of Phoenician trade that is in dispute and the absence of any evidence. Few would deny that an occasional Carthaginian ship may have slipped round to Land's End. But what may have happened is not history. One Phoenician does not make an Argosy and there are stronger claims for the handling of Cornish tin by local shipping and so overland to Massilia, so that neither Greek nor Punic can be considered as having a monopoly.

Of critical comments there is space for only a few. The *cire perdue* process is a certainty, not a possibility, in Crete (p. 335). The inlaid daggers of Mycenae are certainly not Egyptian work (p. 353). There is no mention of the great nephrite and lapis lazuli axes of Troy, and nowhere can be found a full account of the niello process and, indeed very little mention of it except on p. 531. Archaeologists are extremely vague about this matter. Evans describes the black of niello as an alloy of silver and iron. Here it is suggested, I think rightly, that it is powdered silver sulphide applied with a blowpipe. A niello worker's outfit was found near Van.

The book is a monument of erudition and patience. British scholarship is to be congratulated upon this really astonishing feat of research. STANLEY CASSON.

STORY OF SCOTLAND IN STONE. *By* IAN C. HANNAH. *Edinburgh : Oliver and Boyd*, 1934. *pp.* XVI, 352, *and* 93 *illustrations.*

Mr Hannah commences this interesting study of Scottish architecture with a series of generalizations, many of which are open to comment. He says of Scotland that ' the world may be searched in vain to find another nation so interested in the understanding of literature and the arts ', of the Incas and Maya peoples that ' they could not even write ', and of Henry Raeburn that he is one of the world's greatest artists ; of Gothic cathedrals that their real power would be gone if they were transplanted from one region to another ; of Celtic art that ' it is one of the few really great achievements of mankind '. From this it can at once be gathered that Mr Hannah has not let his imagination roam far from Scotland. In consequence this book, interesting and well-informed as it is, is neither a scholarly production nor an important contribution to the study of architecture.

The chapter on the genesis of Celtic art ignores the fact that much of what is termed Scottish Celtic owes its inspiration to Northumbria, although the author is fully aware of the importance of Northumbrian art. He is equally unaware that the Scottish brochs are, architecturally, not peculiar to Scotland. He should look at Sardinia and Transjordan. His description of Samian ware as ' beautiful ' needs no comment, but his

surprise that so oriental a theme as the visit of St. Anthony to Paul the hermit should appear on the Ruthwell cross shows that he is not conversant with the various Byzantine influences at work in this island. His description of the early Scottish carved stones as ' among the most remarkable early Christian monuments that the world can show ' is ludicrous exaggeration, while his suggestion that later developments of Byzantine architecture do not approach the ' glories of Agia Sophia ' is simple misstatement. It is not until one is well into the body of the book that one finds that there really is something distinctively Scottish about Scottish architecture. The Norman and Romanesque periods seem hardly to have differed from the English in style. The Gothic at its outset remained stubbornly southern and, as the author says, ' there were numerous minsters on rather English lines ' during the great age of cathedral building. Scotland ' did not develop as yet any very striking features of her own ' (p. 88). In the ' high noon ' of Gothic, Scotland was ' building a number of churches on much the same lines as England ' (p. 144) and one wonders at what age the Scots began to show signs of that essentially national style about which the book set out to give a description. In the end we discover that the English Perpendicular style was the first English style not to be adopted in Scotland. But that does not mean that Scotland turned to France, for Scotland does not ' possess a single church of this period that could possibly be mistaken for a French one '. Actually in the late 15th and 16th centuries Scotland at last developed a splendid style of church and cathedral building and with the Renaissance showed a perfected style, essentially Scottish, for castles, private houses and public buildings.

S. Casson.

DER GEIST DER VORZEIT. *By* R. R. Schmidt. *Keilverlag, Berlin,* 1934. 5 *marks, bound* 6.50 *marks.*

The only fault that we have to find with this admirable book is a mere matter of literary taste, about which there is room for legitimate differences of opinion. The author has a way of expressing himself in short, abrupt sentences, often destitute of verbs ; and this detracted slightly from the pleasure and interest with which we, personally, read his work. But our pleasure and interest were so great, that we could spare a little of them without a serious sense of loss.

A logical sanity is a leading characteristic of Dr Schmidt's work. The author has no truck with wild or even unnecessarily recondite theories. For him, Humanity begins in the Ice Age, not in some remote Tertiary epoch. For him, the *Homo primigenius* of the Mousterian and earlier stages, and the *Homo sapiens* of the later Palaeolithic, are successive evolutionary phases of the same being. Dr Schmidt's long and honourable record in practical research, chiefly in the German caves, gives him a right to speak with authority : the retracing of the steps whereby the earlier form of Man develops into the later, here set forth, is both fascinating and convincing. It is illustrated with a long and well-selected series of figures. While we may complain that some of these, though perhaps inevitably, have become a little too familiar with constant repetition—we wish that some explorer would find a few more Grimaldi negroids somewhere, so as to give a rest to the overworked ' mother-and-son ' of the *Grotte des Enfants*—many others are new, or not easily accessible. These include graphic and ingenious restorations of the Laussel ' woman with a horn ', and the sorcerer of the *Caverne des Trois Frères,* as those personages must have appeared in the flesh.

The prologue and epilogue, headed respectively ' Seele und Artgedächniss ' and ' die Magische Wirklichkeit ', for their full appreciation may possibly call for a greater

familiarity with the writings of Nietzsche than the present reviewer possesses : but the body of the book which lies between requires no such formidable preparation.

In the first chapter, on ' The World of the Ice Age ', the author treads well-beaten paths. He tells us of the extent of the ice-sheets ; touches on the unsolved problem of their causation ; and traces their effects on the living inhabitants of the regions affected. He refuses to accept the existence, in Europe, of early Ice-Age Man, or of the beginnings of human life. For this he looks to the warmer zones which have yielded the Javan *Pithecanthropus* and the Chinese *Sinanthropus*. These beings he accepts definitely as ancestors of the human stock—he has nothing to say of complex genealogies of the Primates, with truncated branches ending in these and similar abortive forms.

The second chapter deals with the ' Primitive Formation of Man ', and traces the development of the human body from preceding forms. He sees no gap in the sequence *Pithecanthropus—Sinanthropus* I—*Sinanthropus* II—*Homo primigenius*. The Mauer jaw for him belongs to a middle-ice-age precursor of the fully developed *Primigenius* of Neandertal and his fellows, with whom he groups the Tabgha skull of Galilee and the Broken Hill skull of South Africa. All of these are outliers of a wide-spread human race, which, under climatic and other influences, is to develop into the varieties of *Homo sapiens*. Clearly such a scheme allows no room for an anachronistic *Homo sapiens* in the Acheulean period. This part of the book is packed with information, impossible to summarize—for it is itself a summary, one of the best and fullest that has come our way, of the knowledge of the facts of human development acquired down to the date of publication.

A valuable part of this section of the book is its definitive recognition of a triple division of *Homo sapiens* in late glacial times—the Löss Man of Brünn and Předmost, the Cro-Magnon Man, and the Grimaldi Man—and the description of the physical characters of each : together with a reconstruction of the interplay of these three human groups, and of their respective contributions to civilization.

At p. 90 the real subject of the book, the ' Awakening and Development of the Human Soul ', begins. At the beginning of the work the author makes a claim that here he breaks new ground : a claim to which at first sight, with the works of such writers as Mainage and Luquet in remembrance, we were inclined to affix a query. But as we read on, we removed the query : for although old ground is inevitably traversed, the author finds something new at almost every step. There is no book known to us in which the subject is treated in exactly the same way, or in which so many relevant facts are correlated.

Once more, the reviewer is at a loss. The egg is so full of meat that it cannot be adequately compressed into a review. First we read of the technical awakening of humanity, under the twofold stimulus of warfare with formidable beasts and of food-acquisition : here incidentally we note an interesting analogy drawn between the outline of the primitive *coup de poing* and of the human hand. At the same time deeper problems suggest themselves—death, and the hypothetical necessities of the *lebende Leichnam* with which the awakening man finds himself embarrassed.

Next, game becomes increasingly difficult to procure, and a hunting-magic, culminating in the marvellous cave-paintings, gradually develops. Again, nature has implanted a desire to multiply and to perpetuate the species ; and erotic magic, expressing itself in personal ornaments, comes into existence. There is, of course, nothing new in either of these theses ; but they are here treated with unusual thoroughness, especially in their initial manifestations. In a shorter chapter, dealing with the dance and its magic, the

cult of the dead, and the interpretation of the Spanish Capsian paintings, the book leaves us on the threshold of the complex theologies to be developed in later times.

The book ends with a number of evolutionary and chronological tables, an adequate bibliography, and an analytical index. We could have wished to see this supplemented with an ordinary alphabetical index.

If someone would translate this book into English, he would provide our students with an introduction to the study of Palaeolithic Man which it would be difficult to supersede.* R. A. S. MACALISTER.

MORE MOVES ON AN EASTERN CHEQUERBOARD. *By* SIR HARRY LUKE. *Lovat Dickson and Thompson*, 1935. *pp.* x, 270 *and* 24 *plates.* 12*s* 6*d.*

The author of these readable chapters has travelled widely in an official capacity, and watched the light and shade of post-war events passing over the eastern landscape. His erudition is great, but, we hasten to add, not overwhelming, either for himself or for the reader. It consists of the sort of knowledge one needs when travelling in ' foreign parts ', but which, alas, one usually only acquires after one's return home. As one reads, one keeps saying ' I wish I had known that when I was there ' ; and one envies him also his knowledge of languages. Historically the essays are valuable because they often cast side-lights upon recent events which are probably unrecorded elsewhere, such as those in Georgia and Armenia before the Soviet regime was established, and in Lemnos during the war. We are grateful to the author for some good stories and some unforgetable pictures ; the desert bath-house of Quseir Amra with its ' charming, and even suggestive, painting ', and the ' grey elongated figure ' of the dead Bedu ; the episcopal gin-palace of Lemnos ; the sceptical Ossete (p. 93) ; the photograph of a ' Cypriote priest expressing olive-oil ' (opp. p. 190), and of Kiamil Pasha in Cyprus (opp. p. 186) ; and the tale (quoted) of Mohammed's maternal aunt searching his holy head for lice. It is good to find that Sir Harry Luke appreciated the difference between Armenians ' of the Diaspora ', living under Turkish or British rule and ' the inhabitants of the independent Armenia '. One gathers that he preferred the latter, as did the reviewer, who found them both capable and charming. Their resemblance in some respects to the Jews, which he remarked, is in accordance with anthropological views ; for the hooked nose, so characteristic of the ancient Hittites, is an Anatolian rather than a Palestinian feature.

Those who want their history and archaeology presented in a palatable form will find it here, together with many (dare we say welcome ?) antidotes ! O.G.S.C.

CHAMBER TOMBS AT MYCENAE. *By* A. J. B. WACE. (*Archaeologia*, LXXXII). *Oxford : for the Society of Antiquaries*, 1932. *pp.* XIII, 242, *frontispiece*, 57 *plates* (9 *in colour*), 50 *plans and illustrations.* £5 5*s.*

This finishes the publication of the excavations at Mycenae of the British School at Athens under Professor Wace in 1920–1923. The Society of Antiquaries undertook the publication, and the rich illustration is due to the generosity of Miss M. B. Wright, of Washington. Twenty-four Bronze Age tombs were found, distributed in the ' Third Kilometre ' and Kalkani cemeteries. Tsountas, who excavated many tombs at Mycenae, supposed that these were grouped in clan or family cemeteries, and his conjecture is strongly supported. The tombs range in date from the First Late Helladic period to

* We commend this suggestion to publishers. We know of no recent book in English which covers the same ground.—EDITOR.

the very end of the Third Late Helladic (from *c.* 1600 to *c.* 1100 B.C.), and supply a means of studying the funerary habits, pottery and other utensils, personal treasures, and even racial type of the ruling class in the period of Mycenae's greatest power. For the style of the tombs and of their contents—even though the richer portion of the latter has mostly to be inferred—show that they were the resting places of wealthy families, and indeed Professor Wace suggests that these underground chambers were the lesser archetype of the royal beehive-tombs : these are not the humble burials of a subject population. Thus while the book must be closely studied by specialists, its interest is much wider and more general, and some account of its main conclusions will be welcome here.

The chamber-tomb may, it is surmised, have been developed from the Early Helladic rock-shelter, and itself have given rise to the tholos-tomb. The Mycenae tombs were hollowed out of the soft rock of the hill-side, and in constructional details followed natural demands. Thus there is no rule for orientation ; the plan, usually roughly rectangular, is not invariably so, and was probably always dictated by convenience and owes nothing to the inspiration of house-plans. The height is very variable, and conditioned by circumstance ; and neither proportions nor size nor chamber-plan nor width of doorway can be used as a criterion of date. But the type of dromos—a tunnel cut in the rock without reinforcement—changes, as at Asine, from the rather wide and short passages of L.H. I and II to the narrow, long ones, almost wedge-shaped in section, of L.H. III. And other, though not constant, features of the dromoi can be used as evidence of date.

It is amply proved that the tombs remained in use, as family vaults, from L.H. I to the very end of L.H. III. The dromos, filled in at the last burial, would be dug out (its entrance was presumably indicated by a ' marker '), not always necessarily to its whole depth ; and the bones of previous interments placed in pits in the dromos ; this is nicely illustrated by the observation that sherds found in one such pit belonged to pots most of whose fragments occurred with early interments in the chamber. Less often these pits were in the chamber itself. But sometimes the bones were swept with scant ceremony into the dromos or into a corner. It seems, however, possible that usage was refined with time, and that the remains of previous interments were covered with a layer of earth, above which the newly interred corpse was laid. Sometimes, indeed, the fall of soft rock from the roof anticipated this attention. The dead were, apparently, clothed : a man might wear a helmet adorned with boar's tusks, the women's clothes had gold rosettes. Rock-cut benches played a part in ritual. There was no embalming, nor, of course, cremation : but the tomb was fumigated. With the dead were placed objects of daily use : valuables were sometimes removed when a tomb was reopened, as family property ; the dead seem to have been thought to possess a kind of life only so long as there was flesh upon the bones : perhaps fear was a motive for walling them in. In the dromoi many kylix fragments were found ; as the earth was shovelled in, it is inferred, a last farewell was drunk and the cups were shattered. There is little or no evidence for or against human sacrifices : but a hound might go with his master to the grave.

The evidence for this reconstruction (together with matter here omitted) is contained in the detailed account of the excavations (parts I and II), and is collected in the commentary (part III). The effect produced by Professor Wace's account is enhanced by the restraint with which his results are described : for example, among the contents of one tomb we read of a jug, succinctly described and compared with parallels : its position when found is added : ' *Chamber, just below edge of bench at south end, as though*

it had just fallen off '. Observation can go no further ; nor, surely, discretion in recording it.

The pottery is fully described in part III ; it is the first collection of complete vases from Mycenae, except for the few from the Shaft-Graves, yet published ; over 350 were found, very valuable evidence for the evolution of ceramic style ; this is particularly important for L.H. I and II, and this publication must be added to the corpus of works devoted to Late Helladic pottery. An interesting pot with human figures is included. The non-ceramic objects include some bronze and precious metals (though not in great quantity), gems, beads, etc. : all these are fully described and illustrated.

The racial problem arises firstly by reference to burial practices, which in the mainland differed from those of Crete : for example, the posture of the dead, perhaps a survival from Middle Helladic usage ; the excessively rare and late use of coffins ; and the use of a peculiar type of funerary alabastron : and secondly from a consideration of Professor Fürst's appendix on the skeletal remains, a summary of findings published elsewhere under the auspices of the University of Lund. After remarking that the two Middle Helladic skulls from graves below the Ramp House are Nordic rather than Mediterranean, and perhaps indicate that there was early a population in Greece of non-Mediterranean race (and perhaps the neolithic skull from Hageorgitika in Arcadia should be taken into consideration here), Professor Fürst says that from the skulls examined from the Kalkani cemetery it is impossible to determine whether a new racial element entered Mycenae during the Late Helladic period : but from one tomb a range of skulls dating from L.H. I or II to the later part of L.H. III was obtained ; and these happen to give the same length-breadth index (74) in all cases where this measurement could be taken. This supports the view that the tomb remained in the use of one family throughout. It is possible, from the general results, to predicate the existence of two racial groups, with the dolichocranic element preponderating. But only 13 skulls were available for measurement, so that the results need to be used with caution. Yet comparison with Professor Koumares's measurements of other L.H. skulls from Mycenae does not alter the picture presented by Professor Fürst : that of a mixed population, of which the men differed racially from the women, who were Mediterraneans ; the men may have been of Nordic race, so far as the anthropological evidence shows.

The top of the Kalkani hill, now bare rock, was probably inhabited, since Early and Middle Helladic sherds occur as part of the soil in the dromoi : the site should be explored both for traces of occupation and for Early and Middle Helladic burials : ' some likely places have been noted, and we know that there are chamber tombs still to be excavated on the slope of the hill which forms the south bank of the ravine '.

W. L. CUTTLE.

THE SWEDISH CYPRUS EXPEDITIONS : Finds and Results of the Excavations in Cyprus, 1927–1931. *By* EINAR GJERSTAD, JOHN LINDROS, ERIK SJOQVIST, ALFRED WESTHOLM. Vol. I. *pp.* 578, 16 *plans*, 217 *text-figs.*, 155 *plates. Stockholm : Swedish Cyprus Expedition.* 145 *kr.*

Cyprus, though exceptionally endowed with archaeological treasures, has long been extremely unlucky as regards their excavation and preservation. For many years the ancient cemeteries and sanctuaries of the island were the hunting ground of amateurs, and also unfortunately of tomb robbers. As a result there is hardly a museum of any importance which does not possess a collection of Cypriote antiquities, but antiquities that have been torn from their contexts and are in consequence archaeologically dumb.

The Cesnola Collection, now in New York, showed what might be found, but the world has always cared more for museum specimens than for scientific archaeology. Although official circles were lukewarm after the British occupation, Ohnefalsch Richter did useful work and the Cyprus Exploration Fund began systematic excavations. The valuable researches of Myres proved that order could be introduced into Cypriote archaeology and that from it much important information could be won. Unfortunately his excellent example was not followed up by his fellow countrymen till recent times, which have seen a welcome revival of official interest in the antiquities of the island. Thus the Swedish Expedition, which under the direction of Dr Einar Gjerstad worked from 1927 to 1931, was the first to conduct really modern scientific excavations on a sufficiently adequate scale in Cyprus. That the first volume of the results has been able to appear so soon is due to the systematic organization of its operations and the provision of proper facilities for field and for museum work. The book is well got up, and it is well printed and equipped with all the necessary plans, sections, and text-figures, and the plates are admirable. The material found ranges from the Neolithic Period through the Bronze and Early Iron Ages, the classical and Hellenistic periods down to Roman times. The Expedition excavated and examined with scrupulous care temples, tombs, settlements, fortresses, a theatre at Soli, and a most interesting palace at Vouni. The principles and methods of the excavation as described on p. xv were fully in accord with all modern scientific requirements, which are unfortunately not always followed, even by British explorers. This volume is a record of the work done at nine main sites. At Petra tou Limniti there was a pre-neolithic settlement. At Lapithos, in addition to a neolithic site, many tombs were explored and the full publication of this more recent work emphasizes the delay in publishing the results of the British excavations there in 1913. Here, as in the later sections dealing with other excavations, full details are given of the stratification, of the architecture, and of the finds which are also set out in sequence-tables according to the strata. By these means the relative chronology of the site is determined. At Kythrea another neolithic settlement was found with interesting house-plans. At Ayios Iakovos tombs and sanctuaries of the Bronze and Iron Ages were explored. At Nitovikla a fortress architecturally important was cleared and near it a tumulus cemetery at Paleoskoutella, a type hitherto unknown in Cyprus. In the same neighbourhood Kountoura Trachonia yielded Hellenistic tombs. At Trachonas another important architectural find was a built tomb of stone dated to the middle of the first archaic period and similar in style and construction to some found at Tamassos by Ohnefalsch Richter. Last, but by no means least, comes Enkomi (a site which will always be a reproach to the good name of the British Museum) where at last scientific excavation has given us the information so badly needed about one of the most important cemeteries of the late Bronze Age which has been so badly mauled by unscientific or illicit digging. The detailed accounts of the tombs and of the stratification of the burials they contained and the full catalogue of the finds from each shows how much priceless information was missed by the earlier excavators. Now the archaeological facts given by the Swedish Expedition about the cemetery, together with the contemporary material from Ayios Iakovos, throw much needed light on the previous finds. The discoveries too of Dr. Schaeffer at Ras Shamra on the Syrian coast opposite also fit most opportunely into the same context. The chronological sequence which has thus been made out will be invaluable for all students of Eastern Mediterranean archaeology, especially in view of the Syrian and the Aegean connexions which will illuminate the extension of Mycenaean influence in the Levant. The excavators' conclusions on these points will be eagerly

awaited and if the succeeding volumes maintain the same high standard they may well claim to have set Cypriote archaeology on an entirely new footing, its greatest advance since Myres' catalogues of the Cyprus Museum and of the Cesnola Collection. So to Dr Gjerstad and his collaborators our warmest thanks and heartiest congratulations on a fine piece of work so scientifically carried out and so adequately published.

TROLDEBJERG, EN BYMAESSIG BEBYGGELSE FRA DANMARKS YNGRE STENALDER. *By* J. WINTHER. *Rudkøbing*, 1935.

Attention was drawn in ANTIQUITY for June 1934, pp. 206–7, to the importance of Herr Winther's excavations on a settlement-site of megalithic folk of the early passage-grave period at Troldebjerg, on the Danish island of Langeland. The hope, there expressed, of a fully illustrated report has been realized in the well-produced publication before us. The work is made available to a wider public by the provision of a German summary.

The excavations extended over four seasons (1930–33) and occupied a whole year in the field, but Herr Winther must feel satisfied that the results have more than justified his labours. The masses of sherds recovered show that we have to deal with a settlement of people living at the height of the ' grand style ' of the northern megalithic pottery ; quantities are illustrated by first-class half-tones and will be found useful for comparative purposes. But the real interest of the excavations lies in the light they throw on the economy, the houses, and even the religion of a society, most of our previous knowledge about which has been obtained from the excavation of graves.

Evidence for agriculture is provided by impressions of grains on potsherds, identified by Dr Knud Jessen as belonging to wheat and emmer (*Triticum dicoccum*) ; sickles occurred in two forms, the single-piece type being represented by a broken crescentic specimen, and the multiple type by five sickle flakes. Remains of domestic animals (ox, pig, sheep and dog) were plentiful, but hunting evidently played a very minor role.

Not the least interesting feature of the excavation was the discovery that two radically different house-forms—an approximately circular form with one entrance, and a rectangular form—were apparently inhabited at the same period, judging from the material removed from their floors. The circular (or horseshoe) houses were not very large, varying between 4 and 6 metres in diameter ; traces of an outer covering of burnt clay were found in one instance. The rectangular houses were of the utmost interest, consisting of a row of three placed end to end at a distance of approximately a metre apart ; the houses were placed on slightly different axes, though forming a single complex, the total length of which was 71 metres (233 feet). The houses seem to have had solid wooden walls to the west (presumably the quarter from which the prevailing winds blew), represented today by slots in the old ground surface bordered on either side by rows of small boulders. The central roof gable was supported by a row of substantial wooden uprights set into stone-packed post-holes, running the length of each hut parallel with the west wall. The eastern wall, indicated by a row of smaller post-holes at the northern ends of the huts, was evidently lower than the western and only extended for part of the length of the house, the roof extending pent-wise to the ground for the southern forepart of each house. In each case hearths and traces of occupation were confined to the forepart of the house, suggesting that the northern ends were used to house domestic animals, as in many peasant houses of today.

Some rather fanciful passages under the head of religion should not be allowed to

obscure the interest of two finds pointing without doubt to some form of axe cult. On the floor of the slot for the western wall of the central of the three rectangular houses an isolated thick-butted flint axe was found, suggesting comparisons with ' thunder-bolt ' beliefs current among peasants up to the present day. Secondly a ' votive offering ', consisting of a similar flint axe set butt-downwards in the ground and accompanied by a small pot, was discovered underlying a spread of pebbles inside one of the circular huts.

J. G. D. CLARK.

A BOOK OF ANCIENT HISTORY FROM MINOS TO CONSTANTINE. *By* DINA PORTWAY DOBSON. *Nelson and Sons*, 1934. *pp.* 173, *with illustrations.* 2*s.*

This attractive little volume is suitable for junior pupils in secondary schools or older pupils in primary schools. It tells in very simple language the story of Greece and Rome from the Minoan civilization to the reign of Constantine. The information is up-to-date, and the choice of subjects is well-calculated to give to young children a right idea of ancient civilization, whether it is studied for itself or as an introduction to later history. As far as possible, the method of study suggested is practical, based on drawing and modelling, and at the end of each chapter a few exercises are suggested to make clear points raised in the text. The book is profusely illustrated—with six pictures in colour (all except one—an unfortunate exception—representing ancient works of art, either vases or wall-paintings), over fifty in black and white (of wide interest and range), and ten maps.

R. C. CARRINGTON.

THE ORIGINS OF THE INSULAE AT OSTIA. *By* PHILIP HARSH. *Memoirs of the American Academy in Rome*, 1935, XII, 9–66, pl. 1–3.

This study makes a wide survey of Mediterranean houses in ancient times in an effort to trace the origins of the large blocks of tenements that have been uncovered at Ostia. In an introductory section on ' Significant Developments at Pompeii ', the author examines several types of house at Pompeii, that either have been taken or might be taken as prototypes of Ostian houses. He attacks the theory, put forward in ANTIQUITY, (June 1933, VII, 133–152), that a logical development can be traced between the old atrium-house and the ' House of Diana ' or the ' House of the Round Temple ' at Ostia. At the same time he picks out certain Pompeian houses that, in his view, offer closer analogies. The main body of the paper treats of the houses at Ostia and similar houses found elsewhere. Three kinds are distinguished: (1) a type with an open cortile, surrounded by shallow corridors, at the centre; (2) a type with an open cortile without corridors; (3) a type, without a central cortile, composed mostly of rows of shops, back to back. The first type, in the author's view, was an adaptation of the Greek ' peristyle ' house to the needs of life in large cities, while the other two types might have been evolved independently.

R. C. CARRINGTON.

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